CALIFORNIA
FIRE WEATHER
ANNUAL OPERATING PLAN

2006

CALIFORNIA FIRE WEATHER ANNUAL OPERATING PLAN 2006

CALIFORNIA ANNUAL OPERATING PLAN 2006

I. INTRODUCTION

This document serves as the California Fire Weather Annual Operating Plan (AOP) for the National Weather Service (NWS) and the interagency fire management community operating under the California Wildfire Coordinating Group (CWCG). The general relationship between the NWS and the interagency fire management community is set forth in the following documents:

Interagency Agreement for Meteorological Services Among the Bureau of Land Management, Bureau of Indian Affairs, U.S. Fish and Wildlife Service, and National Park Service of the U.S. Dept. of Interior, the Forest Service of the U.S. Dept. of Agriculture, and the National Weather Service of the U.S. Dept. of Commerce (National MOA or National Agreement);

Interagency Agreement Between the California Wildfire Coordinating Group and the National Weather Service;

National Weather Service NWSI 10-4: Fire Weather Services;

2006 National Mobilization Guide; and

2006 California Mobilization Guide

The AOP provides specific procedural and policy information regarding the delivery of meteorological services to the fire management community in California.

II. CHANGES FOR 2006

A new fire weather web portal is available for use: http://www.wrh.noaa.gov/sto/cafw/. Please bookmark this page. New Emergency Communication Center Dispatch Area (ECCDA) forecasts are available from this web site, as are all NWS fire weather zone forecasts for California. Direct links to Predictive Services products are also available. Shortly after the finalization of the ECCDA project, the daily Fire Weather summaries from the GACC Predictive Service Units will cease. The GACCs will then develop a graphics based product highlighting significant operational Fire Weather concerns of Days 1-2. This should be available by mid July. Please see the Joint Responsibilities section of the AOP for more detail.

FARSITE weather data will be generated automatically for all spot forecasts starting this season (after June 15th). Data can also be generated without a spot forecast by the NWS on request. Please see the NWS Services and Responsibilities section for more information.

At customer request, the following fire weather zone forecast changes have been made:

WFO Sacramento has split fire weather zone 269 in two. Zone 269 is the number of the northern half of the current zone and number 211 represents the southern half of the current zone.

Complete information is available here: http://www.weather.gov/os/notification/scn06-13calif_fire_zone_chg.txt

WFO Eureka has realigned most fire weather zone for northwest California. Complete information is available here: http://www.weather.gov/os/notification/scn06-13calif_fire_zone_chg.txt

WFO San Diego has changed the names of the fire weather zones in southwest California to better reflect geography. Complete information is available here: http://www.weather.gov/os/notification/scn06-17san_diego_firezone_name_chg.txt

Red Flag Criteria has been slightly modified for portions of the Southern California deserts. Please refer to Section D of the Joint Responsibilities section for the latest Red Flag Criteria tables.

More CANSAC products have become available in the past year. There is now an Air Quality products section, which includes expanding BlueSky capabilities.

Be sure to check Appendix F for the latest list of NFDRS Trend forecast sites and responsible NWS offices.

III. SERVICE AREAS FOR NWS OFFICES AND FIRE WEATHER CENTERS

Fire weather forecast services are provided by forecasters at National Weather Service offices and in Predictive Services Units at the Redding and Riverside Geographic Area Coordination Centers. All Red Flag Warnings and Fire Weather Watches, all spot forecasts for wildfires, and all forecasts used to develop National Fire Danger Rating System (NFDRS) indices, are issued by the NWS. Both groups provide spot forecasts for prescribed burns, narrative and/or graphical forecasts for planning purposes, and have trained Incident Meteorologists (NWS) or Technical Specialists (PSU). Details on these services are contained in the plan.

A. NWS Weather Forecast Offices (WFOs) Serving California (Bold indicates shared counties.)

WEATHER FORECAST OFFICE	COUNTIES (including local fire depts.) WITHIN THE FIRE WEATHER FORECAST DISTRICT	FEDERAL AND STATE AGENCIES USING THE FIRE WEATHER FORECASTS
Medford WFO http://www.weather.gov/medford	Siskiyou, Modoc	CDF: Siskiyou and Lassen-Modoc Units USFS: Klamath, Modoc, North Shasta Trinity NFs NPS: Lava Beds NM USFW: Lower Klamath Basin Refuge BLM: North NorCal BLM
Eureka WFO http://www.weather.gov/eureka	Del Norte, Humboldt, Trinity, Mendocino	CDF: Humboldt-Del Norte and Mendocino Units USFS: Six Rivers, West Shasta-Trinity, West Mendocino NFs BLM: West NorCal BLM NPS: Redwood NP BIA: Hoopa Valley Tribe

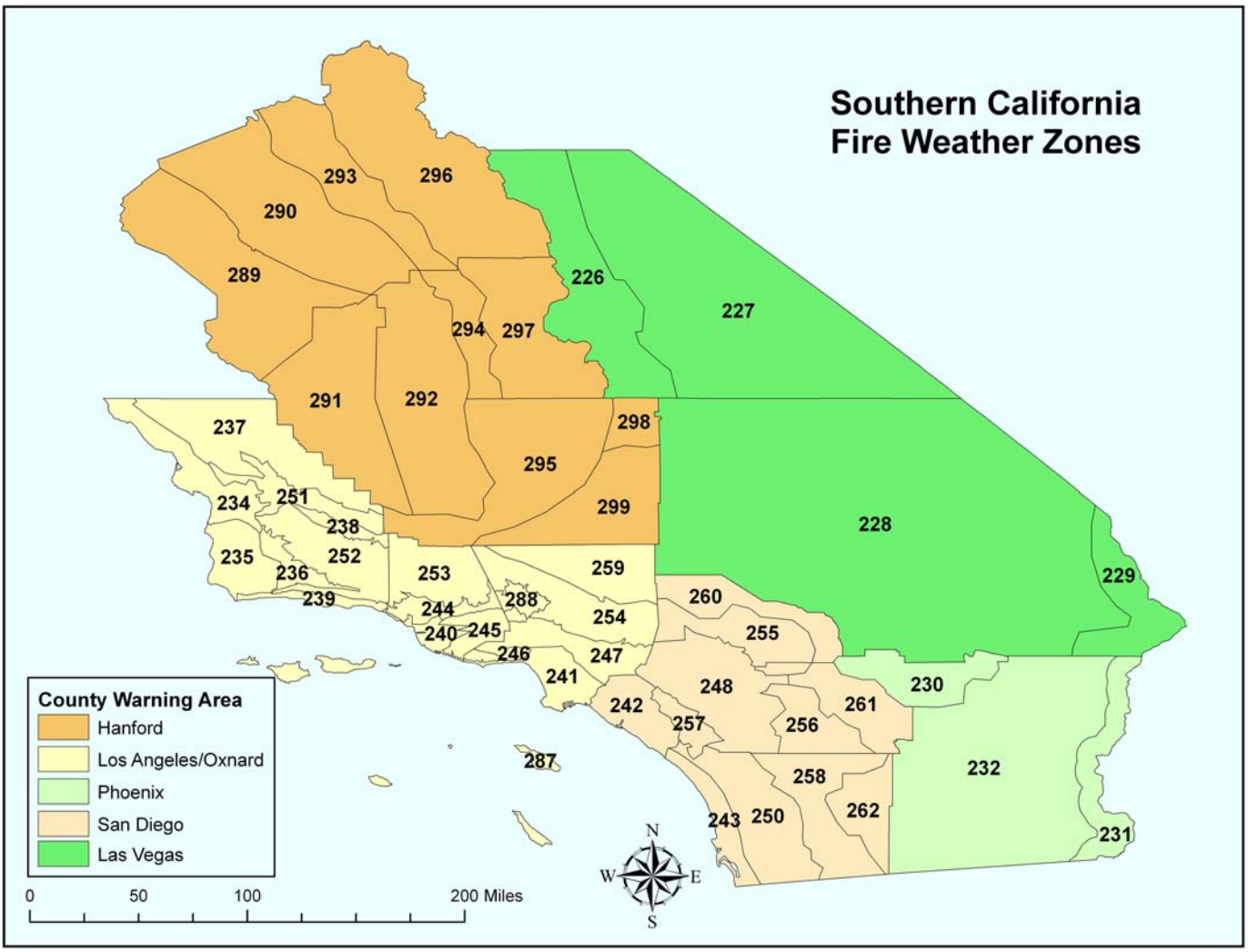
Sacramento WFO http://www.weather.gov/sacramento	Shasta, Tehama, Glenn, Colusa, Butte, Yuba, Sutter, Lake, Yolo, Sacramento, Calaveras, Amador, San Joaquin, Solano, Stanislaus **Western Portions of**: Plumas, Sierra, Nevada, Placer, El Dorado, Tuolumne, Alpine	USFS: South Shasta-Trinity, East Mendocino, West Lassen, West Plumas, West Tahoe, El Dorado, Stanislaus NFs BLM: South NorCal and North CenCal BLM NPS: Lassen NP, Whiskeytown NRA USFW: North Central Valley Refuges CDF: Shasta-Trinity, West Lassen-Modoc, Butte, East Sonoma-Lake-Napa, Tehama-Glenn, Amador-El Dorado, Tuolumne-Calaveras and West Nevada-Yuba-Placer Units

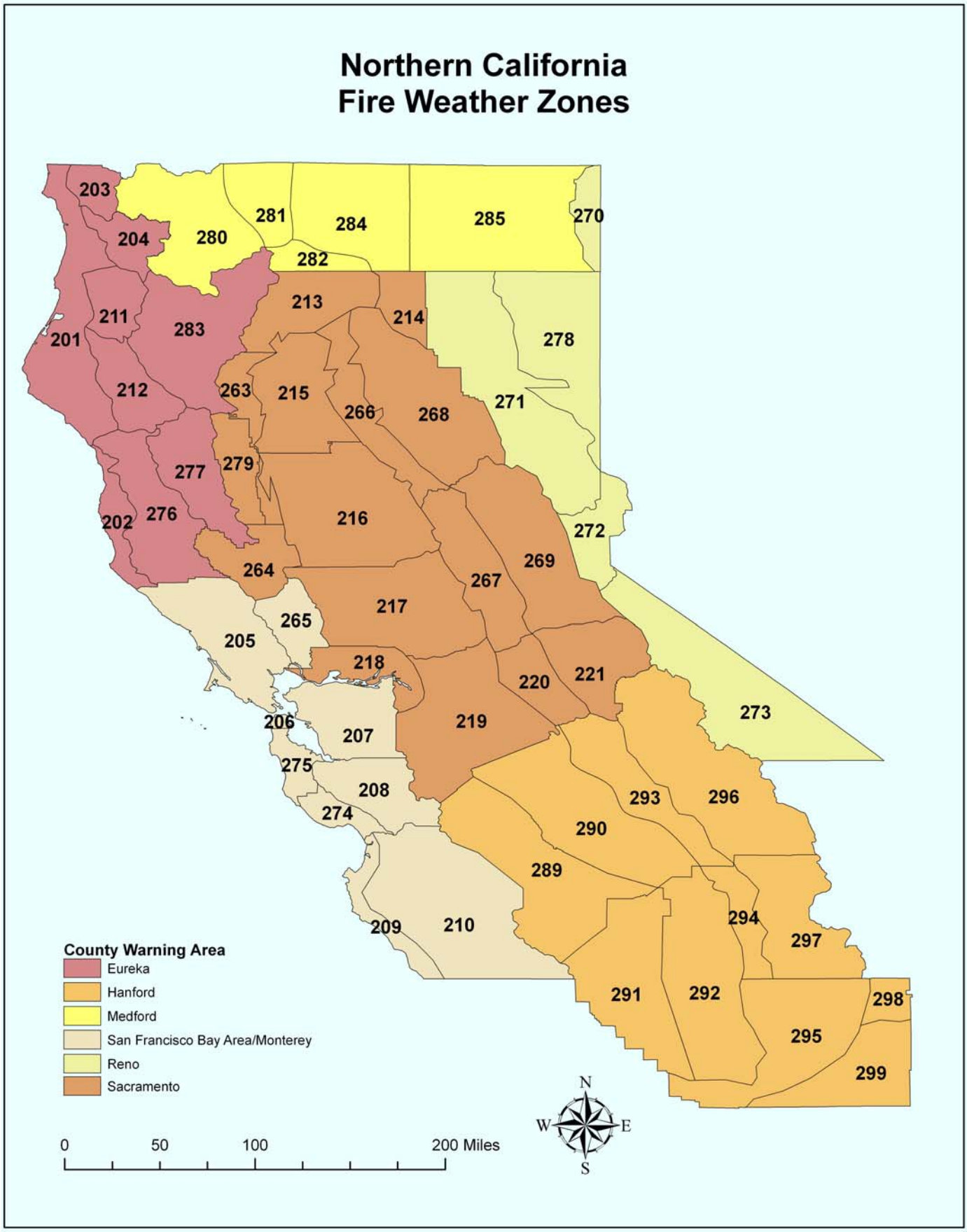
Reno WFO http://www.weather.gov/reno	Lassen, Mono **Eastern Portions of**: Modoc, Plumas, Sierra, Nevada, Placer, El Dorado, Alpine	BLM: NE and East NorCal and Northeast CenCal BLM USFS: East Lassen, East Plumas, East Tahoe, Humboldt-Toiyabe, Northern Inyo NFs and Tahoe Basin Management Unit (USFS) CDF: East Lassen-Modoc Unit and East Nevada-Yuba-Placer Units
San Francisco Bay Area/Monterey WFO http://www.wrh.noaa.gov/mtr/	Sonoma, Napa, Marin, Contra Costa, Alameda, San Mateo, Santa Clara, Santa Cruz, Monterey, San Benito	CDF: West Sonoma-Lake-Napa, San Benito-Monterey, Santa Clara and San Mateo-Santa Cruz Units NPS: Point Reyes NRA, Golden Gate NRA, Pinnacles NM USFS: North Los Padres NF DOD: Ft Hunter-Liggett
Hanford WFO http://www.weather.gov/hanford	Mariposa, Merced, Madera, Fresno, Kings, Tulare, Kern **SE Tuolumne Co** in Yosemite NP	NPS: Yosemite andSequoia/Kings NP BLM: Western CenCal BLM USFW: South Central Valley Refuges USFS: Sierra and Sequoia NFs CDF: Tulare, Madera-Mariposa-Merced and Fresno-Kings Units
Los Angeles/Oxnard WFO http://www.weather.gov/losangeles	San Luis Obispo, Santa Barbara, Ventura, Los Angeles	CDF: San Luis Obispo Unit NPS: Channel Islands NP, Santa Monica Mountains NRA DOD: Vandenberg AFB USFS: Angeles and South Los Padres NF USFW: Southern California Refuges

San Diego WFO http://www.weather.gov/sandiego	Orange, San Diego **SW San Bernardino Co.** Western Riverside Co.	USFS: San Bernardino NF CDF: San Diego, Western San Bernardino and Western Riverside Units; California State Parks LD BLM: South Coast BLM USFW: Southern California Refuges USFS: Cleveland and San Bernardino NFs

Phoenix WFO http://www.weather.gov/phoenix	Eastern Riverside Co.	BLM: California Desert BLM USFW: Southern California Refuges NPS: Joshua Tree NP
Las Vegas WFO http://www.weather.gov/lasvegas	San Bernardino (except Southwest) Inyo	CDF: Northern San Bernardino and Eastern Riverside Units USFS: Southern Inyo NF BLM: California Desert BLM NPS: Mojave National Preserve, Death Valley NP USFW: Southern California Refuges

B. National Weather Service Fire Weather Zones





2006 California Fire Weather Annual Operating Plan

C. Predictive Services Units Serving California

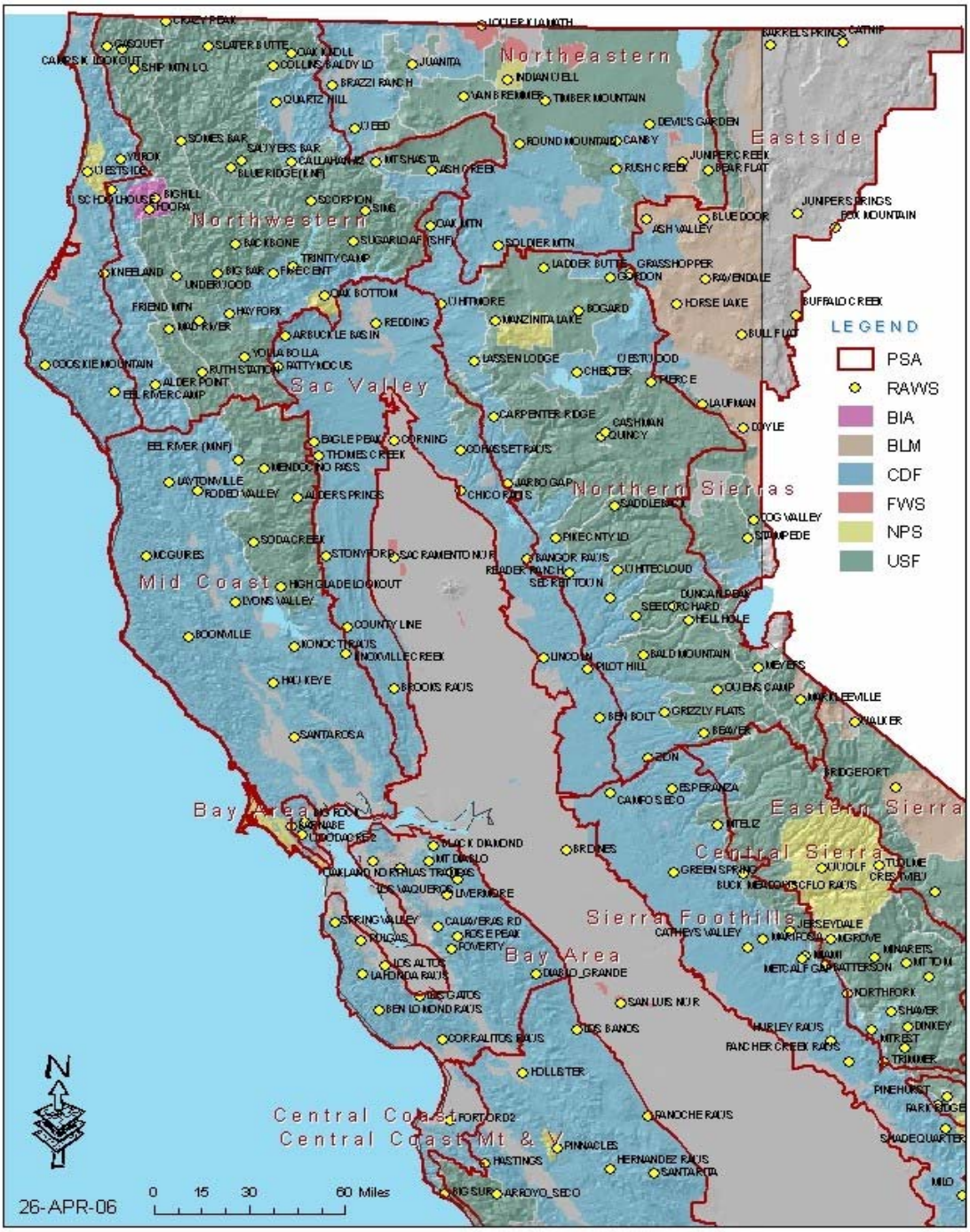
Predictive Service Unit	Predictive Service Areas within this PSU
Redding http://gacc.nifc.gov/oncc/predictive/weather/index.htm	North Coast PSA Mid Coast to Mendocino PSA Bay Area PSA Northwestern Mtn PSA Sac Valley / Foothills PSA NE California PSA Northern Sierra PSA Eastside PSA
Riverside http://gacc.nifc.gov/oscc/predictive/weather/index.htm	Eastern Sierra Mountains and Valleys PSA Central Sierra PSA Southern Sierra PSA Sierra Foothills PSA Central Coast Mountains and Valleys PSA Central Coast PSA Southern California Central Mountains PSA Southern California Coast and Valleys PSA Southern California Southern Mountains PSA Southern California Deserts PSA

D. Participating Agencies

DOC/NOAA/National Weather Service
USDA Forest Service – Pacific Southwest Region (except Hawaii)
DOI Bureau of Land Management – California State Offices
DOI National Park Service – Pacific West Region
DOI US Fish and Wildlife Service – Pacific Region
DOI Bureau of Indian Affairs – Pacific Region
California Department of Forestry and Fire Protection
California Wildfire Coordinating Group (including contract counties and city fire departments)

E. Predictive Service Area Maps

Redding PSU



Riverside PSU

Predicitve Service Area's & RAWS for Southern California

IV. NWS SERVICES AND RESPONSIBILITIES

Information on current operational NWS fire weather forecast products follows. Significant changes to these forecast services or deployment of new operational forecast services will be coordinated through the California Wildfire Coordinating Group (Reference NWSI 10-403). Any non-operational forecast products will be clearly labeled as "Experimental" or "Prototype".

A. Individual Forecast Office Information

Weather Forecast Office	High Season Forecasts	Morning Forecast	Afternoon Forecast	Low Season Forecasts	NWS Forecast Zones
Extreme Northern California – Medford	Usually by June 1 to November 1; Customer coordinated depending on weather/fuels	7:30 a.m.	3:30 p.m.	Daily 3:30 p.m.	280-282, 284, 285
Northwest California – Eureka		7:30 a.m.	3:30 p.m.	M-F 3:30 p.m. also M at 8 a.m. *	201-204, 211, 276212, 276,277, 283
North Central California – Sacramento		7:30 a.m.	3:30 p.m.	M-F 3:30 p.m. also M at 8 a.m. *	213-2210, 263, 264, 266-269
Extreme Eastern California – Reno		7:30 a.m.	3:30 p.m.	Daily 7 a.m.	270-273, 278
Central Coast California – San Francisco Bay Area/Monterey		7:00 a.m.	3:00 p.m.	M-F 3 p.m. also M at 7 a.m. *	205-210, 265, 274, 275
Central California Interior – Hanford		7:00 a.m.	3:30 p.m.	M-F 3p.m. (PST) or 3:30 (PDT) also M at 7 a.m. *	289-299
Southwest California – Los Angeles/Oxnard	Usually May 15 to December 1; Customer coordinated depending on weather/fuels	9:30 a.m.	3:30 p.m.	M-F 3:30 p.m. also M at 9:30 a.m. *	234-241, 244-247, 252,253, 254, 259, 288
Extreme Southwest California – San Diego		7:300 a.m.	2:30 p.m.	Daily by 97:300 a.m.	242, 243, 248, 250-253, 255-258
Southeast California – Phoenix		7:30 a.m.	3:30 p.m.	Daily 7:30 a.m.	230-232
Southeast California – Las Vegas		7:00 a.m.	3:30 p.m.	Daily 7 a.m.	226-229

* excludes Federal Holidays

B. Fire Weather Planning Forecasts

These provide general, zone-based information for daily preparedness and planning purposes. They are not to be used in lieu of spot forecasts.

Issuance times – During fire season, routine planning forecasts will be issued twice daily – once in the morning and once in the afternoon - seven days per week. During low fire season, NWS offices serving California issue one fire weather planning forecast each weekday morning, with minor variation based on local customer requirements. See the Individual Forecast Office Information table for specific issuance times for each NWS office. The beginning and ending dates of fire season forecasts vary by year, but are linked for North Ops and South Ops, and are based on customer feedback.

Update/Corrected forecasts - Forecasts will be updated or corrected upon issuance of a Fire Weather Watch or a Red Flag Warning, when the current forecast does not adequately describe significant weather expected in the future, or when typographical/format errors prevent proper interpretation of the forecast.

Access – Forecasts are available via WIMS, the California Fire Weather Page (http://www.wrh.noaa.gov/sto/cafw/), NWS office web sites and Predictive Services web sites. NWS office web pages may be linked from the Individual Forecast Information Table. Links to forecasts and NWS web pages also can be found on the National Fire Weather Page at: http://fire.boi.noaa.gov/

Content and Format – Forecasts will conform to the national standard narrative, per NWS Directive 10-401. Morning forecasts will focus on the following 36 hours and afternoon forecasts on the following 48 hours, with general extended outlooks in both cases out to at least five days. Forecasts are subdivided into meteorologically and topographically similar forecast areas called zones.

Each forecast will begin with pertinent headlines and a **non-technical** weather discussion. Headlines are required for Red Flag Warnings and Fire Weather Watches. Headlines are recommended for other situations that affect fire danger without meeting Red Flag criteria. Discussions should normally be no more than 8 lines in length.

Short-term forecast for the first 36 or 48 hours - Short-term forecasts are highly detailed and emphasize information which is needed for initial attack and day-to-day fire management. Each forecast zone or zone grouping contains the following elements, listed in the order they will appear:

- Headline(s) as appropriate
- Sky/Weather
- Temperature
- Relative Humidity
- Wind – 20-foot RAWS standard (slope/valley and ridgetop, as appropriate)
- Chance of Rain and/or Chance of Wetting Rain (CWR)
- Lightning Activity Level (LAL)

Forecasts may include the following optional elements based on local customer requirements:

- Haines Index
- Mixing Level or Mixing Height

- Marine Layer
- Transport Wind
- 10,000-foot Wind
- Ventilation Category (or numeric value)
- 24-hour Trends (of temperature and relative humidity)

Descriptions of forecast parameters can be found in Appendix A.

An example of a morning issuance is available in Appendix B1.

Extended Outlook to at least day five - Beyond 36-48 hours, the forecasts are used for resource planning. They contain general guidance information, keying on significant changes in temperature, humidity, wind, or weather needed for decision-making purposes.

C. NWS Spot Forecast

Spot forecasts are site-specific forecast products issued for wildfires, wildland fire use events (WFU), prescribed burns, search and rescue operations, areal spraying, etc., and are available upon request at any time. Spot forecasts are available to any federal, state, or municipal agency as described in NWSI 10-401. When smoke dispersion/ smoke management is a concern, prescribed burn spot forecasts can be requested from the Predictive Service Units at Redding or Riverside.

Spot forecast information is highly perishable. Using up-to-date spot forecasts is important. With this in mind, the NWS expects that the requested issuance time for spot forecasts will be within a few hours of when the requestor will begin using the forecast. If a significant delay occurs – particularly if there is anything in the forecast or in observed conditions which raises concern – it is recommended that the requestor call the NWS office and discuss the forecast with a meteorologist.

Issuance Times - Priority for the issuance and desired lead time is as follows:

Wildfire or HAZMAT spots - Forecasts for the original issuance or unscheduled updates will be made available as soon as possible and no longer than one hour after the request is received, unless a longer lead time is negotiated. Requests for scheduled updates for ongoing spots (such as for a shift briefing) should be submitted to the issuing office with as much lead time as possible and at least two hours before needed.

Prescribed burn or WFU spots - Forecasts for original issuances or scheduled updates should be made with as much lead time as possible, with requests made in the afternoon or evening for delivery of a prescribed burn spot the next morning being the recommended lead time.

Forecasts for unscheduled updates for prescribed burn spots, either due to a specific request based on weather at the site or due to monitoring invoked by the phrase, “Request Priority Monitoring” or similar in the remarks section of the spot forecast request, will be issued as soon as possible and no longer than two hours after it is recognized that an update is desirable.

All remaining spot forecasts - Forecasts for original issuances and routine or unscheduled updates will be issued as soon as possible, as negotiated with the requestor.

Updated Forecasts - Site-specific forecasts are considered one-time requests and are not routinely updated. However, if determined necessary, updates will be done within 24 hours of requested issuance time of the spot if the following occurs:

- Representative observations are available, the meteorologist has been made aware that monitoring is desired, and the meteorologist deems the current forecast does not adequately represent current or expected weather conditions which might affect the burn
  - OR -
- The meteorologist is specifically asked for a verbal or written update, such as when forecast conditions appear unrepresentative of the actual weather conditions.

Corrections - The spot forecast will be corrected when a typographical or format error is detected that prevents correct interpretation of the forecast. Corrections should be delivered to users in the same manner as the original spot forecast when possible.

Access – Use of the Internet is the standard for requesting and retrieving NWS spot forecasts and should be used when available. Spot forecasts can be accessed from the California Fire Weather Web page (http://www.wrh.noaa.gov/sto/cafw/), all NWS office fire weather web pages and Predictive Services web pages. When Internet access is not available, spot forecasts may be requested and disseminated via phone or fax using the backup spot forecast request form found in Appendix E.

At or before the time of a spot request, the requesting agency should provide information about the location, topography, fuel type(s), elevation(s), size, ignition time, and a contact name(s) and telephone number(s) of the responsible land management personnel. Also, quality representative observation(s) at, or near, the site of the planned prescribed burn, or wildfire, should be available to the responsible WFO along with the request for a spot forecast(s). Internet-based spot request programs and the backup form both provide blocks to fill these data in and will indicate which are absolutely essential to receive a spot forecast.

Upon completion, spot forecasts are posted to the appropriate Fire Weather Page of the NWS forecast office web site that received the request. NWS web sites may be linked from the Individual Forecast Information Table.

Content and Format – Exact content depends on user request. Headlines are always included if a Red Flag Warning or Fire Weather Watch is in effect at the time of issuance.

The forecast period is based on user request and will contain up to three periods, such as “TODAY”, “TONIGHT”, and “FRIDAY.” If requested, and if enough weather information is received to make it feasible, a more specific first period such as “AT 11 A.M. IGNITION” may be used. In these cases, the meteorologist will not just forecast for the planned ignition time, but will include significant changes expected in the forecast parameters for the rest of the usual period, e.g., 11 AM temperature and the expected daytime maximum temperature.

When requested, an outlook for a longer duration will be appended, such as “OUTLOOK FOR WEDNESDAY THROUGH FRIDAY” for a spot requested on Monday.

The most commonly requested forecast parameters are the following:

Discussion
Sky/Weather (including chance of rain)
Maximum/Minimum Temperature
Maximum/Minimum Relative Humidity
20-Foot or Eye-Level Winds

Unless otherwise requested, wind forecasts will be of the same type as given in the request, i.e., if eye-level wind observations are provided in the request, then eye-level wind forecasts will be provided in the spot forecast - and similar for 20-foot winds.

Other elements, such as transport winds, mixing depth, LAL, etc., may be included upon request

When information for several days in the future, rather than a near-term forecast, is needed, the routine planning forecast should be consulted. The interactive "weather planner" available from all NWS office web pages, can also be used for longer term planning. If it is determined from this that a longer-range spot forecast is desired, a spot for a general weather outlook for specific days may be requested.

The basic format of a spot forecast is shown in Appendix B2.

Spot Forecast Feedback Requirement - Agencies will follow-up requests for spot forecasts with a telephone call to the appropriate NWS forecast office to ensure receipt of the request. Requesting agencies are also highly encouraged to provide fire-line weather observations for the validation of weather forecast accuracy. For further explanation of the feedback process, see Section F, page 26.

FARSITE Data

For the 2006 fire season (after June 15th), all NWS Western Region Offices will offer automatic 7-day FARSITE weather data support with all wildfire spot forecast issuances. For prescribed burn spot forecasts, FARSITE data will be produced at the request of the agency. Please call the NWS office issuing the prescribed burn forecast directly to request this service, or place the request in the "Remarks Section" of the spot request form.. All FARSITE data will be available from the internet via the appropriate NWS office Fire Weather Page. Check for a "FARSITE Forecasts" button near the Spot Forecast Request link. The data will be in simple ASCI format. Examples of the two FARSITE support outputs ("weather" and "wind") are below. If you have any questions, please contact your servicing NWS office.

Weather:

ENGLISH
03 06 12 0700 1600 30 54 59 30 5620
03 07 63 0700 1600 27 44 84 63 5620
03 08 14 0700 1600 23 43 81 47 5620
etc., through seven days

Wind:

ENGLISH
03 06 0000 11 200 79
03 06 0300 12 200 84
03 06 0600 14 200 95
03 06 0900 15 200 95
03 06 1200 15 200 95
03 06 1500 14 200 90
03 06 1800 13 210 80
03 06 2100 10 220 80
03 07 0000 09 210 80
03 07 0300 08 210 80
03 07 0600 11 240 80
03 07 0900 11 260 80
03 07 1200 09 260 80
03 07 1500 09 270 77
03 07 1800 10 290 70
03 07 2100 11 320 70
etc., through seven days

D. Fire Weather Watches and Red Flag Warnings

NWS offices issue Fire Weather Watches and Red Flag Warnings for critical fire weather patterns that contribute to extreme fire danger and/or fire behavior.

A ***Fire Weather Watch*** is used to alert agencies to the high potential for development of a Red Flag event in the 12-72 hour time frame. The Watch may be issued for all or selected portions of a fire weather zone or zones. A watch may be issued in the first 12 hour time period only for an expected dry thunderstorm event.

A ***Red Flag Warning*** is used to inform agencies of the imminent or actual occurrence of Red Flag conditions. A Red Flag Warning is issued when there is high confidence that Red Flag criteria will be met within the next 24 hours, or if those criteria are already being met.

Criteria for Red Flag Warnings/Fire Weather Watches

Dry Lightning - A lightning event that is not accompanied by enough precipitation to significantly wet fuels that have been identified as critically dry. Significant precipitation is defined as ranging from .05 inches for grass or brush fuels to .15 inches for closed-canopy timber/heavy fuels.

Watches and warnings will be issued when dry lightning is expected to be widespread. Isolated events or events of short duration (i.e., events which start dry but become wet within an hour or two) do not need warnings but will be headlined in the forecast.

Wind and Humidity - Wind and humidity criteria are geared toward those situations which may result in rapid spread of wildfires. Because topography and vegetation play a big role in this, several sets of criteria are used across California. Where possible, issuance criteria have been meshed with those

used in adjacent states to meet the needs of agencies whose jurisdictions cross state lines. Criteria are listed in the Wind/Humidity Table.

Red Flag warning/fire weather watches in discussions and headlines - In the discussion portion of the Fire Weather Planning Forecast (FWF), NWS offices will mention critical weather patterns that might lead to conditions approaching or exceeding Red Flag criteria through the extended forecast. This will assist fire agencies in their allocating and moving resources in anticipation of increased fire activity. Fire Weather Watches and Red Flag Warnings will be headlined in spot forecasts, the fire weather narrative, and appropriate zone sections within the fire weather planning forecast. The headline will be in the same format as on the RFW product itself.

Collaboration with agencies - Fire Weather Watches and Red Flag Warnings normally will be issued only after conferring with the affected agencies or a representative subset of affected agencies, to include the Redding and Riverside Predictive Services Units. This will allow for input on fuel conditions and local concerns. However, the ultimate responsibility for the issuance of a watch/warning rests with the NWS forecaster.

Red Flag warning/fire weather watch access - If issuance of a Red Flag Warning or Fire Weather Watch requires an update of the general forecast, the NWS office will verbally notify the Redding and Riverside Predictive Services Units as soon as possible. During non-duty hours for the PSUs, contact the GACC Coordinator on Duty (COD).

Wind/Humidity Table

Area Description	NWS Fire Weather Zones	Criteria	
Southern California desert area excluding the Colorado River Valley	226-228, 230, 232, 260-262	Relative Humidity ≤ 15% and wind gusts GTE 35 mph for 3 hours or more	
Colorado River Valley	229,231	Relative Humidity ≤ 15%, with sustained winds (20 foot) ≥ 20 mph and/or frequent gusts ≥ 35 mph for 3 hours or more	
Antelope Valley and SE Kern County Deserts	298, 299, 259	Relative Humidity ≤ 15% and sustained (20-foot) winds ≥ 25 mph for a duration of 8 hours or more	
Southern California from mountains westward	234-258, 288-297	**Either** Relative Humidity ≤15%, with sustained winds ≥ 25 mph and/or frequent gusts ≥ 35 mph (duration of 6 hours or more)	**Or** Relative Humidity ≤ 10% (duration of 10 hours or more) regardless of wind
Northern California East of Cascade/Sierra Crest and Western Great Basin including the Modoc Plateau	214, 270-273, 278, 284, 285	**Tahoe Management Basin**: Three hours of wind gusts ≥ 30 mph and Relative Humidity ≤ 20%	**Rest**: Three hours of wind gusts ≥ 30 mph and Relative Humidity ≤15%.
Northern California West of the Cascade/Sierra Crest	201-213, 215-221, 263-269, 274-277, 280-282	See matrix below	

Wind/RH RFW Decision Matrix for Northern California West of the Sierra Crest

Matrix assumes daytime 10-hour fuel moisture ≤ 6% (measured at 1300), annual grasses are cured, and that no wetting rain (greater than 0.10 inch) has fallen in the last 24 hours.

Sustained 20-foot Wind Speed (Note: the wind event should be expected to last at least 8 hours). **W** indicates that the forecaster should consider a warning.

Relative Humidity	Sustained Wind 6-11 mph	Sustained Wind 12-20 mph	Sustained Wind 21-29 mph	Sustained Wind 30+ mph
Daytime Minimum RH 29-42% and/or Nighttime Maximum RH 60-80%				W
Daytime Minimum RH 19-28% and/or Nighttime Maximum RH 46-60%			W	W
Daytime Minimum RH 9-18% and/or Nighttime Maximum RH 31-45%		W	W	W
Daytime Minimum RH < 9% and/or Nighttime Maximum RH < 31%	W	W	W	W

Red Flag Warnings and Fire Weather Watches will remain in effect through the expiration time noted in the forecast, or until canceled or upgraded

Red Flag Warnings and Fire Weather Watches are available via WIMS, from the California Fire Weather web page (http://www.wrh.noaa.gov/sto/cafw/) and the web site of the issuing NWS office. Links to all forecasts and NWS office web pages can be found on the National Fire Weather Page at http://fire.boi.noaa.gov/.

Red Flag Warning/Fire Weather Watch format and contents - A short message (RFW) will be used for issuing, updating, and canceling all Fire Weather Watches and Red Flag Warnings, an example is in Appendix B3. That message will include:

- Headline including description of watch/warning, description of valid location, and time period for which watch/warning is valid.
- Short discussion detailing causes and nature of the event.

Red Flag Warning/Fire Weather Watch verification – Four items are verified for Red Flag Warnings:

- ***Probability of Detection (POD)*** = correct warnings / (correct warnings + missed warnings). If every event that should have been warned, was warned, then the verification score would be 1.0
- ***False Alarm Rate (FAR)*** = 1 – (correct warnings / (correct + incorrect warnings)). Perfect verification would be zero, indicating that every warning verified.
- ***Critical Success Index (CSI)*** = correct warnings / (correct + incorrect + missed warnings). Perfect verification would be 1.0.

- ***Lead Time*** = Number of hours between issuance of warning and occurrence of the event. Because of the uncertainty involved, lead time for dry lightning Red Flag Warnings tends to be much shorter than other Red Flag Warnings.

2006 Goals
(Synoptic Event Based Red Flag Warnings)

POD = 0.91
FAR = 0.27
CSI = 0.68
Lead Time = 10.0 hours

2006 Goals
(Dry Thunderstorm Based Red Flag Warnings)

POD = 0.70
FAR = 0.50
CSI = 0.50
Lead Time = 6 hours

By January 31st of each year, every NWS office issues a fire weather annual summary for the previous season that includes Red Flag Watch and Warning verification. These reports are available from the fire weather web page of each NWS office.

Agency feedback on the accuracy and quality of Red Flag Warnings and Fire Weather Watches is strongly encouraged.

E. NFDRS Forecasts

The NWS provides weather forecasts for parameters that permit the NFDRS software to predict the next day's fire danger indices.

Criteria for Issuance – NWS will issue daily forecasts for use by the NFDRS during periods determined in consultation with land management agencies. Dates during which these forecasts are needed vary by year and by office. NFDRS observations from land management agencies must be complete and available in WIMS by 1330 LST/1430 LDT. These must be made available to the NWS from WIMS in collectives before 1400 LST/1500 LDT. NFDRS stations that do not have valid observations in WIMS on time will not have next day fire danger indices available.

Content and Format – Complies with NWSI 10-401 and is outlined in Appendix B4 for reference.

Procedures – For every NFDRS observation received from WIMS at the 1400 LST (1500 LDT) collective, forecast weather parameters for 1300 LST (1400 LDT) the next day will be produced. This will occur through zone trend or station trend forecasts. Regardless of the forecast methodology, NWS will take appropriate measures to ensure that forecast values for NFDRS stations do not unduly deviate from historical possibility for those stations. Towards this end, zone and station trend forecasts will be favored over station specific (point) forecasts.

Verification Goals – The following goals have been agreed to for California:

Temperature Error ≤ 5 degrees Fahrenheit
Relative Humidity Error ≤ 8%
Wind Speed Error ≤ 4 mph
Fuel Moisture Error ≤ 2% (June through September)

10-Hour Fuel Moisture Trends – The U.S Forest Service Region 5 uses the Sale Activity Level (SAL) Program to regulate timber sales and other contracts on public lands. SAL uses forecast 10-minute wind speed trend and forecast 10-hour fuel stick trend. As a result, a10-hour fuel moisture trend should be provided by the NWS. In order for this to occur, the NFDRS trend forecast should make no entries in the trend forecast for max and min temperature or max and min humidity, but instead it should include a 10-hour fuel moisture trend.

If no entry is made for the forecast 10-hour fuel moisture trend, WIMS will use computed 10 hour fuel moisture from a RAWS algorithm and will determine a trend. **Problems arise** with this approach since the trend varies from station to station and the computed value is lower than what would be provided from a weighed stick. This results in a higher SAL number and more restrictions.

Project Activity Level (PAL), which uses forecast Energy Release Component and Ignition Component, will replace SAL in Region 5 contracts in the future. PAL does not require a 10 hour fuel stick trend.

F. Participation in Interagency Groups

NWS offices providing service within California are expected to provide representation at the regional AOP meeting held at least annually. Proxy representation is acceptable. NWS offices are also expected to host at least one meeting per year with local fire management units to strengthen the customer relationship and address local concerns.

G. Additional Services

NWS will provide and maintain a cadre of trained IMETs.

H. Forecaster Training

The NWS recognizes the need for specialized training in fire weather meteorology for forecasters. Any NWS meteorologist producing fire weather products must meet the requirements set forth in NWS Directive 10-405 and the following currency requirements set forth by the CWCG:

Prepare and issue at least 15 fire weather forecasts in the last 12 months at the current duty station; and
Prepare and issue the lesser of at least 10% of office spots or at least 5 spots in the past 12 months; and
Successful completion of all WFO fire weather drills and/or training seminars in the past 12 months.

If fire weather currency lapses, the forecaster must work no less than three (3) shifts with a forecaster who is current, handling all fire weather duties.

V. WILDLAND FIRE AGENCY SERVICES AND RESPONSIBILITIES

Wildland Fire Agencies' programs provide Geographic Area and national products for the strategic role of resource prioritization and utilization. Some specific responsibilities of Wildland Fire Agencies are listed below:

A. Operational Support and Predictive Services – GACC meteorologists at the PSUs in Redding and Riverside combine forecast information from NWS and other sources into area-wide summaries and briefings. These meteorologists work in conjunction with Fire Intelligence to form the Predictive Services group, which produces integrated fire weather / fire danger assessments for California. The intent of Predictive Services is to provide strategic, regional, and sub-regional information to assist in preparedness, movement, and allocation of fire-fighting resources.

The Predictive Service units at Redding and Riverside provide fire danger and fire potential forecasts and outlooks within California beyond the "next day" NFDRS forecasts provided by the NWS. All products are available online, and can be obtained from either the North Ops PSU web site at http://www.fs.fed.us/r5/fire/north/fwx http://gacc.nifc.gov/oncc/predictive/weather/index.htm or the South Ops PSU web site at http://www.fs.fed.us/r5/fire/south/fwx http://gacc.nifc.gov/oscc/predictive/weather/index.htm.

1. **Routine Predictive Services Products** – (Examples provided in Appendix C)

   a. Daily Product - Fire Weather Discussion / Fire Danger Forecast: one each for the Northern and Southern California Geographic Areas. This text product is written at Redding for the North and at Riverside for the South. Its purpose is to take the large quantity of forecast information provided by the five NWS forecast offices in each Geographic Area and meld it, along with Fire Danger and any other necessary information, into a single forecast product for Geographic Area. These forecasts are subdivided into the Predictive Service Areas (PSAs) of the fire agencies. They have only one weather discussion and a larger scope, which combined with shorter overall length, make them a suitable alternative for dispatchers disseminating weather information to field operations. The "meteorology of the day" is coordinated between the PSUs and the NWS offices in a daily conference call at 0830 local time.

   Issuance Schedule: 0930 and 1530 local time daily during fire season, and M-F during the off season.

   NOTE: This GACC product will cease approximately June 30, following the completion of the NWS ECCDA project earlier in June.

   b. New by mid July – Operational Days 1-2 graphic product (To replace 1a. above) Estimated startup: mid July

   c. 7-Day Significant Fire Potential Product: This product forecasts the potential for significant fires out through the next seven days. In California, we use our 'large fires' criteria (which can vary by Predictive Service Area) as the definition of "significant". The product has a table which consists of:

   1) **Fuel Dryness**
      - Moist Fuels (Green) – Little if any threat for large fires.

- Dry Fuels (Yellow) – Low threat for large fires when a Significant Weather Trigger is absent.
- Very Dry Fuels (Brown) – Moderate threat for large fires when a Significant Weather Trigger is absent.

2) **Significant Weather Triggers**
   - Lightning
   - Wind
   - Unseasonably Hot and Dry

3) **High Risk Day** (Red) - occurs when "Dry" or "Very Dry" Fuel Dryness conditions coexist with a Significant Weather Trigger. The combination of these two factors will create conditions that historically have resulted in large fires across California.

The product also contains a narrative section consisting of a Weather Synopsis, a Fire Potential discussion, and a Resource Capability summary.

Issuance Schedule: 1000 local time daily during fire-season

d. Monthly Fire Weather / Fire Danger Outlook: These combine all available weather, climate, fuels, and fire danger information in order to make a prediction of fire business across the Geographic Area for the coming month. The assessments try, when possible, to highlight the periods and potential for large fire activity and resource utilization, relative to normal. An effort toward validating Monthly Outlooks will beginan thislast fire season, using ERC Fuel Model G.

Issuance Schedule: Year around, prepared a few days prior to start of the new month.

e. Fire Season Assessments: These are estimates of fire potential for longer periods, ranging from three months to an entire fire season in duration. A nationwide collaboration of meteorologists, climatologists, and fuels-and-fire danger experts takes place in the late winter or early spring. This is where season-to-date precipitation, snow pack, temperature and fuels information is amalgamated and a consensus climate forecast is produced by the experts, extending well into the fire season. It is expected that the assessments will be updated as needed back at the Geographic Areas – see below for California.

Issuance Schedule: A pre-season assessment (preliminary) is done at a national workshop in late March or early April. In California, the main update will normally come in either late May or June, with a second adjustment about mid fire season, if necessary.

2. Other Predictive Services Products, Projects and Services

a. Prescribed Burn Spot Forecasts - The Predictive Services Units will provide site-specific prescribed burn (spot) forecasts, for any requesting agency, where smoke dispersion and/or smoke management are concerns. The PSUs have an increasing role in helping the fire agencies accomplish their prescribed burn acreage targets, while minimizing impacts on air

quality. Along with this program, the PSUs will work closely with the California Air Resources Board (CARB), the Air Districts, and Air Pollution Control officers. The PSUs will sponsor daily conference calls at 1300 local time, with prescribed burn managers, CARB, and the air districts. These calls help coordinate burning, especially during "marginal burn days" as outlined in the most recent Title 17.

b. CANSAC Update - The California and Nevada Smoke and Air Consortium (CANSAC) http://www.cefa.dri.edu/COFF/coffframe.php started posting products to the current website in June 2004. Since that time the Operational Applications Group (OAG) has worked closely with modeler Julide Koracin and other CEFA personnel, to continually expand and improve on the graphics package. The main Products array, with 36-, 12-, and 4-km resolution maps, continues to be found at http://www.cefa.dri.edu/COFF/cansac_output.php. The 4-km output can be used to initialize 1-km resolution wind models. had its operational 'kickoff event' at DRI in Reno in May 2004. Products first appeared on the website in June 2004, and the Operational Applications Group (OAG) has worked closely with CANSAC Modeler Julide Koracin and other CEFA personnel since then, to enhance and expand the graphics package. The CANSAC home page has recently been given a new look (go to http://www.cefa.dri.edu/COFF/coffframe.php). The current array of CANSAC graphics products at the 36-km, 12-km, and 4-km resolutions is under Products, at: http://www.cefa.dri.edu/COFF/cansac_output.php. The 4-km output can potentially be used to initialize 1-km resolution wind models.

Advances within the past year include:

- Introduction of Fire Danger Rating products in early 2005
- Introduction of an Air Quality products section in December 2005
- Initial Blue Sky capability is now in place within this section
- At 4-km resolution, the surface wind field, 2-m temperatures, and relative humidity all now Have close up 'quadrant' graphics available. These have proven extremely popular thus far.
- An initial CANSAC users workshop was held at McClellan Training Center in Feb. 2006.

CANSAC's primary goals remain threefold: The production of high-resolution meteorological output for use in operational fire weather work/ ARB burn decisions, air quality monitoring, and smoke transport/ BlueSky type applications. The first goal is well on the road to fulfillment, and significant gains are expected toward the other two goals in 2006-2006. Funding has recently been found to obtain the additional storage hardware (RAID unit) needed for hourly output, a prerequisite for BlueSky runs. For an example of BlueSky applications (from the PacNW) go to http://www.blueskyrains.org/.

The next CANSAC Board meeting is anticipated for this July, probably on the 19th. Following the retirement of Chair Tom Hatcher in January 2006, Susie Stingley (USFS) is the new Chairperson. The Board remains composed of one representative each from the various members. As listed on the CANSAC Home page, the nine contributing member organizations currently include: USDA Forest Service Region 5, the Pacific SW Research Station (i.e. Riverside Fire Lab), BLM California, BLM Nevada, US Fish and Wildlife Service, National Park Service, California Air Resources Board, California Dept of Forestry and Fire Protection, and

San Joaquin Valley Unified Air Pollution Control District. The Board of Directors remains chaired by Tom Hatcher of the USFS, and is com-posed of one representative each from the various members. The OAG, and Technical Advisory Group (TAG) are the two workgroups, and the National Weather Service now has a representative on each Group.

c. Other Ongoing or New Projects - The Predictive Services Units at Redding and Riverside are also involved in the following:

- Effort underway to get 'seamless' forecasts from NWS for each ECC/Dispatch area of responsibility
- Drawdown levels project, for resource decision-making / prioritization
- Preparedness Levels (i.e. monitoring of PL, and associated required actions)
- Use of the MM5 to provide weather streams for Farsite runs and other planning products to the GACC/ incidents (successfully tested in 2003)
- Phase II of the Hourly Fire Danger Rating. Project involves an hourly FD climatology for each Fire Danger Rating Area (FDRA) and a 24-hour FD looping capability, among other things. Still gathering funding within CWCG.
- RAWS quality controlled (QC) data disk recently updated through 20054

B. Program Management - Management of federal land management and fire agencies' fire weather programs and responsibilities.

1. RAWS/NFDRS – The Regional RAWS Coordinators of the various agencies manage the interagency RAWS program within California. This includes regular monitoring of data quality and assisting with station maintenance and acquisition issues. It also involves development of and assistance in providing RAWS training classes. Current agency RAWS coordinators in California include:

USFS	Beth Little	(530) 226-2710
BLM South	Tom Rolinski	(951) 782-4849
BLM North	Steve Leach	(530) 226-2730
NPS	Corky Conover	(559) 565-3129
CDF	Doug Forrest `	(916) 653-6608

2. Liaison – The PSU Program Manager at each Geographic Area (North and South) will be the primary liaison between field fire managers and various service providers including the NWS, the private sector, and the research community.

C. PSU Meteorologists Proficiency and Currency

1. Proficiency

a) Completion of S-190, S-290, and S-390
b) Work no less than five (5) shifts handling all operational products. This includes the preparation and issuance of:
- Daily morning Fire Weather/Fire Danger product
- Afternoon update to above morning product
- 7-Day Significant Fire Potential Product

- Smoke Transport and Stability Forecast
- All Site-specific (spot) forecasts requested, for burns where smoke dispersion or smoke management is a concern

c) Conduct at least 2 each, and 10 total, of the following:
- Daily coordination calls with other GACC office (Redding or Riverside)
- 0830 PDT conference call with the NWS
- 1030 PDT Briefing for Ops/ECC personnel
- 1300 PDT CARB/burners conference calls
- Special briefings and conference calls for CDF and Federal agencies

d) Work with Intel Officer and be able to produce all Predictive Services products (using in-office guidelines or help sheets, as necessary). Included in this are the:
- Monthly Weather Assessments, issued by late in the prior month
- Seasonal Weather and Fire Season Assessments, before early-to-mid high fire season

e) The PSU Program Manager will sign-off on proficiency.

2. Currency

a) The forecaster has prepared and issued at least 12 of the operational products (listed in 1.b.) during the past three months. At least 3 of the 12 should be site-specific (spot) forecasts.

b) If IMET qualified, must maintain proficiency in accordance with NWCG Technical Specialist standards.

D. Technology Transfer – GACC meteorologists will work to integrate advanced technology analytical and prediction systems into fire management planning and operations. Some efforts will include:

- Regional numerical modeling of weather and smoke dispersion. The PSUs are integral players in CANSAC, which run an MM5 mesoscale weather model with 4-km resolution across CA and NV. Hourly output will soon be available on CANSAC, allowing for Bluesky runs on individual burns later this year.
- Continue use of FireFamily-plus in briefing fire Managers/ ECC on fuels and fire danger conditions
- Proper use of RAWS and NFDRS, and assistance with WIMS..
- Research and development to advance fire meteorology.

E. Agency Computer Systems – Where fire management computer systems like WIMS are locally available, access to the systems will be granted to the NWS to provide or develop services, as needed. Costs will be borne by the Interagency Wildland Fire Agencies for requirements that are beyond the distribution of weather information through a central communications gateway.

F. Fire Weather Observations

1. RAWS and NFDRS Observations

Fire weather observations for stations that desire next-day forecasts will be entered into WIMS no later than 1330 PST (1430 PDT). Observations from Remote Automated Weather Stations (RAWS) sites will be the latest data available from satellite interrogation. RAWS and NFDRS stations are expected to be sited and maintained according to NWCG PMS 426-3 “National Fire Danger Rating System Weather Station Standards”. The website to view this document, and any recent updates to it, is http://www.fs.fed.us/raws/standards/. Proper siting of weather stations has always been a high priority in California. The GACC meteorologists are available to assist land or fire managers in selecting proper sites. Annual RAWS maintenance requirements should be adhered to strictly.

2. Fireline Observations and Spot Forecast Feedback

Fireline Observations – Representative observations are required when requesting a spot forecast, whether for a wildfire, prescribed burn, or other project/need. Distance is not the only factor in determining whether an observation site is considered representative. Observations taken only half a mile from the burn site, but beyond a ridgetop and in another drainage, may not be representative for a variety of reasons (e.g. changes in aspect, elevation, local wind direction, vegetative cover, etc.). On the other hand, observations from a fixed RAWS three miles away from the project site could still be quite representative, if it is similar in elevation, aspect, local wind flow, vegetative cover, etc.

Fire agency personnel will take standard fireline observations of temperature, relative humidity, wind direction and speed, and weather/sky condition consistent with guidance provided in NFES 2140 “Weather Station Handbook – An Interagency Guide for Wildland Managers.”

Fire agency personnel are encouraged to discuss the fire or burn with the meteorologist preparing the spot forecast to alert the forecaster to details which would not otherwise be apparent, such as variations in humidity in a large and complex site, when winds switched from upslope to downslope, and similar items which will enhance the quality of the resulting spot forecast.

Spot Forecast Feedback and Validation – Feedback on spot forecasts is requested to validate forecasts and improve accuracy; it should be provided to the appropriate weather office (NWS or PSU) within 12-24 hours of the issuance of any spot forecast for prescribed burn or wildland fire use purposes. Feedback on forecasts issued for wildfires is encouraged. The effort to provide feedback applies mainly to Belt Weather Kit or Kestral observations, since RAWS data are more readily available to the forecaster via the Internet for feedback.

Spot Feedback - The character of temperature, humidity, and wind affecting the burn period. Information made available to the NWS within 24 hours of forecast issuance or before issuance of the next spot forecast, whichever is first.

At a minimum, the following must be included (assuming daytime burn):

- Maximum temperature
- Minimum relative humidity
- Significant afternoon winds (speed and direction)
  In the event of nighttime burning, conditions affecting the burn period could include minimum temperature and maximum relative humidity.

Acceptable methods of providing feedback or validation:

- Phone call to appropriate NWS or PSU office
- Faxed copies of fireline (belt weather) observations
- Submission of information (see example) via "Feedback" section of Internet spot forecast
- Faxed or electronically transmitted copies of hourly weather data from an on-site portable weather station
- Notification of deployment of a portable GOES telemetered RAWS onsite, so NWS can download data from the Internet

G. Reimbursement for NWS Provided On-site Support and Training Assistance – Federal agencies will reimburse the NWS for all costs incurred by the agency for IMET support and training assistance, per the procedures set forth in the National Agreement. The State of California has an agreement with the NWS, which is used for cost reimbursement.

VI. JOINT RESPONSIBILITIES

A. California Fire Weather Web Page – An interagency fire weather web page for California is available this season: http://www.wrh.noaa.gov/sto/cafw/. Please bookmark this page. Emergency Communication Center Dispatch Area (ECCDA) Forecast Summaries are available from this web site. These simplified fire weather summaries are meant to be used for fire agency radio broadcasts while at the same time providing the most essential daily weather information: Sky/Weather, Maximum and Minimum Temperature, Maximum and Minimum Relative Humidity, 20-Foot Winds, CWR, LAL and Haines Index (where used). Any Red Flag Watch or Warning headlines shown in the ECCDA Forecast Summaries are linked to the actual watch or warning product. In addition, all forecast segments within an ECCDA are listed at the beginning of the forecast and can be mouse clicked to jump immediately to that segment.

ECCDA Forecast Summaries will be available daily by 9:45 a.m. and 4 p.m. during high fire season and once per day Monday through Friday (excluding holidays) during the low season. The ECCDA Forecast Summaries are planned to replace some of the Predictive Service Area forecast text. Like PSA forecast summaries, the ECCDA Forecast Summaries will not be updated. Therefore, fire agency personnel should consult the latest FWF and/or RFW issuances for updated information at other times and will be directed to do so on the California Fire Weather web page.

Quick access to all Red Flag and NWS fire weather planning forecasts for California is provided by using the "tabs" across the top of the welcome page. Direct links to many useful services are provided on the left hand side bar. These include:

- Spot forecast requests for wildfires, WFUs and prescribed burns

- All NWS watches and warnings for California and the nation
- Current ROMAN data and other current weather information
- Daily weather summaries, 7-Day outlooks and all other Predictive Service information
- NIFC / NICC
- Background maps showing the relationship between fire weather zones and ECCDAs

The goal of the NWS and fire agencies is to develop this site into a "one stop shopping" page for California fire weather as much as we can, while keeping the page straightforward and easy to navigate. We need your feedback and suggestions to improve the web site. Please follow the links at the top of the page to provide feedback.

B. Training - Meteorological training can be provided by both NWS and GACC meteorologists. The NWS forecast offices primarily handle local courses that occur within their County Warning Areas. The PSUs' primary role is with regional and national level courses. Requests for these (regional and national) courses should be directed to either the Redding or Riverside PSU. Each NWS office and PSU should have at least one person qualified to teach courses up through Intermediate Fire Behavior (S-290/390).

Requests for training from NWS offices should be directed to that office's Fire Weather focal point or Meteorologist-In-Charge. If the office is not able to provide an instructor for a course, that office will assume the responsibility for finding an instructor. Requests for training from the PSUs should be directed to either the Training Coordinator or Team Leader of the PSU. In all cases, sufficient advance notice (≥ six weeks whenever possible) should be given to allow for scheduling and proper preparation.

Costs incurred by NWS in providing training assistance (other than salary costs for a normal non-holiday weekday) will be borne by the requesting agency. Costs incurred by PSU instructors are covered in their annual budget, without need for reimbursement. Below is a table outlining the weather instructor availability for 2006:

Name Of Office	Instructors qualified to teach **S-290**	Other Classes that at least one meteorologist from this office is qualified to instruct (*S-390 did not have a weather section at the time of AOP issuance.)
Redding PSU	Brenda Belongie John Snook Steve Leach	S-190, S-390*, S-490, S-491, S-590, RX-300, RX-410 WIMS, S-144, ECCO, NFDRS
Riverside PSU	Tom Rolinski Ron Hamilton	S-190, S-390*, S-490, S-491, RX-300, WIMS, NFDRS
Eureka	Nancy Dean Jeff Tonkin Mark Burger	S-190, S-390*, S-490, S-590
Hanford	Cindy Bean Dan Gudgel	S-190, S-390*, RX-300
Las Vegas NV	Jim Harrison Andy Bailey	S-190
Medford	Frederic Bunnag Michael Stavish Dennis Gettman Rick Holtz	S-190, S-490

Monterey	Ryan Walbrun Ian Morrison	S-190
Oxnard	Rich Thompson Dave Gomberg	S-190
Phoenix	Valerie Meyers	None
Reno	Rhett Milne James Wallmann Brian Brong	S-190, S-390*
Sacramento	Basil Newmerzhycky Mike Smith	S-190, S-390*, S-490, S-590, RX-300
San Diego	Mike Lavis Rob Balfour	S-190, S-390*, S-490

C. Incident Response – In addition to following direction in the National Mob Guide the following direction is clarification for Command Centers in California.

When an Incident Meteorologist is requested for an incident, **the request will be placed to the GACC.** The GACC will notify the National Fire Weather Operations Coordinator at NIFC so that the ECC does not have to be concerned. Priority will be given to IMET requests. (Larry Van Bussum or his acting: Office 208-334-9862 or Cell 208 863-2582).

The GACC's will maintain a list of qualified IMET's and trainees in ROSS by Weather Forecasting Office identifier, and provide dispatching services for the NWS in California. This list will be updated annually based on the list that is published in the CA Fire Weather Annual Operating Plan. IMET's will be dispatched by the GACC's in CA just as if they are GACC employees.

When the NWS Staff Meteorologist at NIFC determines who will fill the incident request, the information will be relayed back to the GACC. If the IMET is within the requesting Geographic area, the IMET will be mobilized using ROSS.

If the IMET is in the CA GACC that is not hosting the incident, the request will be placed through Selection Area to the other GACC.

If the identified IMET is not in a California Weather Forecasting Office the IMET request will be edited to add a Name Request and placed up to NICC who will place the request to the appropriate GACC.

The following list designates which California GACC will status and dispatch personnel for the California Weather Forecasting Offices. Status can be maintained Available/Local until requested to reduce work.

North Ops	**South Ops**
Eureka WFO	Hanford WFO
Sacramento WFO	Los Angeles/Oxnard WFO
San Francisco/Monterey WFO	San Diego WFO
Honolulu WFO	
Pago Pago/American Samoa WFO	

IMET personnel from Medford WFO, Reno WFO, Phoenix WFO and Las Vegas WFO shall be requested through NICC to their respective GACC using Name Request.

The procedures for requesting IMETs will follow the guidelines outlined in the National MOA, Administrative Procedures section of the current National Mobilization Guide, Personnel section of the current California Mobilization Guide, and CDF Procedure No. 302.

The following information will be provided to the requested IMET:

- Name of fire
- Location of fire
- Directions to location where the IMET is to report and location of Incident Base.
- Name of Incident Commander, Plans Chief, and Fire Behavior Analyst, if available.
- Request and Resource Order number for IMET

Additionally, the user agency is responsible for providing adequate shelter to allow the equipment and fire weather meteorologist to function efficiently. This would include a location that is free of excessive dust, heat and moisture, protection from wind and other elements, table, and chair. Transportation and shelter arrangements should be made at the time of request; 120 volt AC power is desirable.

Below is a list of IMETs, Technical Specialists, and All-hazard Meteorological Response System (AMRS) in the Northern and Southern California Area:

Northern and Southern California Area IMETs and Technical Specialists:
(T) designates a trainee

NWS IMETs:

Location	Name	Agency	ROSS Unit ID
Eureka, CA	Jeff Tonkin	NWS	CA-EKAW
Eureka, CA	Mark Burger	NWS	CA-EKAW
Eureka, CA	Brett Lutz (T)	NWS	CA-EKAW
Hanford, CA	Cindy Bean	NWS	CA-HNXW
Hanford, CA	Dan Harty (T)	NWS	CA-HNXW
Las Vegas, NV	Jim Harrison	NWS	NV-VEFW
Medford, OR	Frederic Bunnag	NWS	OR-MFRW
Medford, OR	Dennis Gettman	NWS	OR-MFRW
Monterey, CA	Ryan Walbrun	NWS	CA-MTRW
Monterey, CA	Ian Morrison (T)	NWS	CA-MTRW
Oxnard, CA	Rich Thompson (T)	NWS	CA-LOXW
Phoenix, AZ	Valerie Meyers (T)	NWS	AZ-PSRW
Reno, NV	James Wallmann	NWS	NV-REVW
Reno, NV	Chris Jordan (T)	NWS	NV-REVW
Sacramento, CA	Basil Newmerzhycky	NWS	CA-STOW
Sacramento, CA	Mike Smith	NWS	CA-STOW
San Diego, CA	Rob Balfour	NWS	CA-SGXW
San Diego, CA	Mike Lavis (T)	NWS	CA-SGXW

PSU Technical Specialists:

Redding, CA	John Snook	USFS	CA-NZF
Redding, CA	Brenda Belongie	USFS	CA-NZF
Redding, CA	Steve Leach (T)	BLM	CA-NZF
Riverside, CA	Tom Rolinski	BLM	CA-OSC
Riverside, CA	Matt Shameson	USFS	CA-OSC

Northern and Southern California Area ATMUs (theodolite):

Cache	ID
Redding, CA	CA-01, CA-03, CA-05, CA-07
Ontario, CA	CA-02, CA-04, CA-06

AMRS Cache Sites
Each NWS office serving California has at least one AMRS.

D. Briefings – Either NWS or GACC meteorologists will conduct briefings upon request, time and resources permitting.

E. Coordination Conference Calls – Coordination conference calls will be conducted, as needed, between the PSUs and the WFOs during fire season. See Appendix D for further details on these calls.

F. WIMS IDs for NFDRS Stations – All NFDRS observation stations are assigned a six-digit station identification number for use in WIMS. The Northern California or Southern California PSUs must be contacted for assignment of a six-digit number for any new station, or for any changes in location made to existing stations that already have a WIMS ID number. This function will be handled through the PSUs and the USFS Regional RAWS Coordinator – Region 5, Beth Little. The PSUs will notify the NWS of any new or relocated NFDRS stations.

VII. AGENCY SIGNATURES / EFFECTIVE DATES OF THE AOP

This AOP shall be effective on the date the last signature is placed on this page and will remain in effect until the date the last signature is placed on this page the following year. Updates or amendments may be added in the interim upon agreement of all signatories. Usually the effective dates are May 1 through May 1 the following year.

Agency Signatures

Signature on file June 23, 2006

_____

Ralph Domanski Date
Acting Chair, California Wildfire Coordinating Group

Signature on file June 23, 2006

_____

Elizabeth Morse Date
NWS State Liaison Official

APPENDIX A - Forecast Parameter Definitions

1. **General Parameters**

Sky/weather – Cloud cover and weather. Weather could include rain, snow, showers, thunderstorms, etc. Cloud cover is as follows:

Clear/Sunny	6% or less cloud cover
Mostly Clear/Mostly Sunny	7% - 31% cloud cover
Partly Cloudy/Partly Sunny	32% - 69% cloud cover
Mostly Cloudy	70% - 94% cloud cover
Cloudy/Overcast	95% or greater cloud cover

Temperature and 24 hour trend – Dry bulb temperature extreme, either daytime or nighttime, and trend of extreme from previous 24 hours.

Humidity and 24 hour trend – Relative humidity extreme, either daytime or nighttime, and trend of extreme from previous 24 hours.

Wind - 20 foot RAWS standard – Surface wind speed and direction as altered by local terrain and surface roughness and measured per instrumentation and siting standards set by NWCG for the RAWS program and NFDRS. In practice, surface wind forecasts produced based on the ASOS standard will be reduced by 20% to obtain 20 ft. winds, except in cases where wide open rangeland or desert is predominant. This same comparison will be used in considering stations other than RAWS to validate forecasts.

Ridgetop winds – Synoptic scale wind speed and direction at or just above mean ridgetop level.

Chance of Rain – Probability of occurrence or areal coverage of 0.01” or greater liquid equivalent precipitation.

Chance of Wetting Rain (CWR) – Probability of occurrence or areal coverage of 0.10” or greater liquid equivalent precipitation.

Haines Index – A numerical means to indicate the potential for existing wildfires to experience large growth and or extreme fire behavior (i.e. crowning, spotting, and rapid rates of spread). The Index combines both the instability and dryness of the air by examining the lapse rate between two pressure levels in the atmosphere and the dryness at the lower level. For most of the western United States, the levels used are 700 mb (about 10,000 ft) and 500 mb (about 18,000 ft). The drier and more unstable the atmosphere, the higher the Haines Index and the potential for extreme fuel driven fire behavior. Haines Index values vary from 2 to 6 and classifications are shown below:

HAINES INDEX	POTENTIAL FOR LARGE FIRE GROWTH
2-3	Very Low
4	Low
5	Moderate
6	High

(Haines Index does not include the effects of wind on fire spread.)

2. **Lightning Activity Level (LAL)**

LIGHTNING ACTIVITY LEVEL GUIDE FOR FIRE WEATHER OBSERVERS					
LAL	Cloud and Storm Development	Areal Coverage	Individual storm cell cloud to ground lightning discharges		
			Counts [1]cg/5 min	Counts [1]cg/15 min	Average [1]cg/min
1	No thunderstorms	None	----	----	----
2	Cumulus clouds are common but only a few reach the towering stage. A single thunderstorm must be confirmed in the rating area. The clouds mostly produce virga but light rain will occasionally reach ground. Lightning is very infrequent.	<15 %	1-5	1-8	<1
3	Cumulus clouds are common. Swelling and towering cumulus cover less than 2/10 of the sky. Thunderstorms are few, but 2 to 3 occur within the observation area. Light to moderate rain will reach the ground, and lightning is infrequent.	15-24 %	6-10	9-15	1-2
4	Swelling cumulus and towering cumulus cover 2-3/10 of the sky. Thunderstorms are scattered but more than three must occur within the observation area. Moderate rain is commonly produced, and lightning is frequent.	25-50 %	11-15	16-25	2-3
5	Towering cumulus and thunderstorms are numerous. They cover more than 3/10 and occasionally obscure the sky. Rain is moderate to heavy, and lightning is frequent and intense.	>50 %	>15	>25	>3
6	Dry lightning outbreak. (LAL of 3 or greater with majority of storms producing little or no rainfall.)	>15 %	----	----	----

[1] Cloud-to-ground lightning discharges

APPENDIX B - NWS Forecast Examples

1. **NWS Fire Weather Planning Forecast** – Morning Issuance Example

FNUS56 KSTO DDHHMM
FWFSTO

FIRE WEATHER PLANNING FORECAST (FOR name of area, optional)
NATIONAL WEATHER SERVICE SACRAMENTO CA
730 AM PDT MON MAY 2 2006

...HEADLINE... (Required for Red Flag Warnings and Fire Weather Watches and significant features at other times)

.DISCUSSION... (Concise, clear, non-technical explanation of the current/forecasted fire weather)

CAZFWZ213-214-DDHHMM-
EASTERN TRINITY AND SHASTA NF-
FIRE WX ZONES 213 214
TIME-DATE (example: 730 AM PDT MON MAY 2 2006)

.TODAY...
SKY/WEATHER.....
MAX TEMPERATURE.....
    24 HR TREND..... (optional)
MIN HUMIDITY.....
    24 HR TREND..... (optional)
WIND (definition)..... (include definition of wind, e.g. 20-ft/10-min avg, slope/valley/ridge)
LOCAL OPTIONAL ELEMENTS.. (transport winds, mixing heights, LAL, CWR, Haines Index, etc.)

.TONIGHT...
SKY/WEATHER.....
MIN TEMPERATURE.....
    24 HR TREND..... (optional)
MAX HUMIDITY.....
    24 HR TREND..... (optional)
WIND (definition)..... (include definition of wind, e.g. 20-ft/10-min avg, slope/valley/ridge)
LOCAL OPTIONAL ELEMENTS..(transport winds, mixing heights, LAL, CWR, Haines Index, etc.)

.TOMORROW...
SKY/WEATHER.....

MAX TEMPERATURE.....
.
24 HR TREND.....(optional)
MIN HUMIDITY.....

24 HR TREND.....(optional)
WIWIND (definition)..... (include definition of wind, e.g. 20-ft/10-min avg, slope/valley/ridge)
LOCAL OPTIONAL ELEMENTS..(transport winds, mixing heights, LAL, CWR, Haines Index, etc.)
(forecast for next geographical descriptor and fire weather zone group)
=
$$

.FORECAST DAYS 3 THROUGH 5...(... (winds must be included days 3-5; other elements per locally-established policy)
.DAY 3...(... (days can be combined, e.g., .FRIDAY THROUGH SUNDAY)
.DAY 4...
.DAY 5...

.OUTLOOK FOR DAY MONTH DATE THROUGH DAY MONTH DATE (optional per locally-established policy: for example, days 6-14, 30 and 90 day outlooks when issued)
=
$$

2. NWS Spot Forecast

THE FOLLOWING IS AN EXAMPLE ONLY:

FNUS76 KHNX DDHHMM
FWSHNX

SPOT FORECAST FOR (NAME) BURN.....USFS
NATIONAL WEATHER SERVICE SAN JOAQUIN VALLEY
830 AM PST MON AUG 29 2006

IF CONDITIONS BECOME UNREPRESENTATIVE… PLEASE CONTACT YOUR NWS FORECAST OFFICE

DISCUSSION...A LOW PRESSURE SYSTEM NEAR THE CALIFORNIA-NEVADA BORDER WILL MOVE SLOWLY INTO SOUTHERN NEVADA MONDAY AFTERNOON. ALTHOUGH THIS WILL ALLOW SOME DRYING TO OCCUR OVER THE BURN…THE AIRMASS WILL REMAIN UNSTABLE THROUGH THE DAY WITH ENOUGH MOISTURE LINGERING TO PRODUCE PARTLY CLOUDY SKIES. WIND WILL ALSO REMAIN LIGHT THROUGH THE DAY BUT FAVOR AN EASTERLY DIRECTION AS THE LOW DEPARTS.

FOR PLANNED IGNITION TIME OF 1100 PST 11/4/03

SKY/WEATHER.....PARTLY CLOUDY
TEMPERATURE.....40-45 AT IGNITION TIME…RISING TO A MAX OF 52-56.
RELATIVE HUMIDITY..60-70% AT IGNITION TIME…LOWERING TO A MIN 53-58%
WIND (20-FOOT).....VARIABLE LESS THAN 5 MPH AT IGNITION TIME. WINDS WILL REMAIN LIGHT AND VARIABLE THROUGHOUT THE DAY.
WIND (RIDGE LVL)...NORTHEAST TO EAST 4-8 MPH.
OPTIONAL ELEMENTS..(PER REQUEST)

FOR MONDAY NIGHT
SKY/WEATHER.....PARTLY CLOUDY EARLY…BECOMING CLEAR OVERNIGHT.
TEMPERATURE.....MIN 34-38
RELATIVE HUMIDITY..MAX 90-100%
WIND (20-FOOT).....VARIABLE LESS THAN 5 MPH. WINDS WILL FAVOR A LIGHT EAST DIRECTION IN THE EARLY EVENING.
WIND (RIDGE LVL)...EAST 4-8 MPH IN THE EVENING…BECOMING VARIABLE LESS THAN 5 MPH OVERNIGHT.
OPTIONAL ELEMENTS..(PER REQUEST)

OUTLOOK FOR TUESDAY
SKY/WEATHER.....MOSTLY SUNNY.
TEMPERATURE.....MAX 58-63
RELATIVE HUMIDITY..MIN 45-50%
WIND (20-FOOT).....BECOMING UPSLOPE TO UPCANYON 4-6 MPH BY NOON WITH BRIEF GUSTS TO 10 MPH IN THE AFTERNOON.
WIND (RIDGE LVL)...NORTHEAST 5-10 MPH IN THE MORNING…BECOMING SOUTHWEST 10-15 MPH IN THE AFTERNOON.
OPTIONAL ELEMENTS..(PER REQUEST)

3. NWS Red Flag Warning / Fire Weather Watch

THE FOLLOWING ARE EXAMPLES ONLY:

RED FLAG WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
900 AM PDT MON AUG 30 2006

CAZ253-254-302230-
/O.NEW.KLOX.FW.W.0005.040830T1600Z-040830T2200Z/
VENTURA COUNTY MOUNTAINS-
LOS ANGELES COUNTY MOUNTAINS-
900 AM PDT MON AUG 30 2006

…RED FLAG WARNING IN EFFECT UNTIL 3 PM TUESDAY FOR STRONG NORTHEAST WINDS AND LOW HUMIDITIES FOR THE MOUNTAINS OF VENTURA AND LOS ANGELES COUNTIES…

THE NATIONAL WEATHER SERVICE IN LOS ANGELES/OXNARD HAS ISSUED A RED FLAG WARNING IN EFFECT UNTIL 3 PM TUESDAY FOR STRONG NORTHEAST WINDS AND LOW HUMIDITIES FOR THE MOUNTAINS OF VENTURA AND LOS ANGELES COUNTIES. A STRONG UPPER LEVEL RIDGE OF HIGH PRESSURE COMBINED WITH MODERATE OFFSHORE FLOW NEAR THE SURFACE WILL BRING HOT AND DRY CONDITIONS ACROSS THE WARNING AREA. LATER THIS MORNING…NORTHEAST WINDS ARE EXPECTED TO INCREASE TO 25 TO 35 MPH WITH GUSTS TO 50 MPH THROUGH PASSES AND CANYONS…WITH SIMILAR WIND SPEEDS EXPECTED THROUGH TUESDAY. MEANWHILE…HUMIDITY VALUES ARE EXPECTED TO FALL BETWEEN 10 AND 15 PERCENT FOR A SIX TO EIGHT HOUR DURATION EACH DAY…WITH POOR OVERNIGHT RECOVERIES EXPECTED. THE COMBINATION OF STRONG NORTHEAST WINDS…LOW HUMIDITY VALUES…AND CRITICALLY DRY FUEL CONDITIONS HAS PROMPTED THE ISSUANCE OF A RED FLAG WARNING FOR THE MOUNTAINS OF LOS ANGELES AND VENTURA COUNTIES.

PLEASE ADVISE THE APPROPRIATE OFFICIALS OR FIRE CREWS IN THE FIELD OF THIS RED FLAG WARNING.

WWUS86 KHNX DDHHMM
RFWHNX

FIRE WEATHER WATCH
NATIONAL WEATHER SERVICE SAN JOAQUIN VALLEY – HANFORD CA
1010 AM PDT TUE JUL 5 2006
VTEC
FWZ296-297-060200-

...FIRE WEATHER WATCH FOR SCATTERED DRY THUNDERSTORMS FOR THE SOUTHERN SIERRA NEVADA FROM YOSEMITE SOUTHWARD THROUGH SEQUOIA NATIONAL FOREST THIS AFTERNOON THROUGH 7PM TONIGHT...

FIRE WEATHER ZONES AFFECTED:
ZONE 296 SIERRA NEVADA FROM YOSEMITE TO KINGS CANYON NATIONAL PARK
ZONE 297 TULARE COUNTY MOUNTAINS

DISCUSSION: THE NATIONAL WEATHER SERVICE HAS ISSUED A FIRE WEATHER WATCH FOR DRY LIGHTNING. SOUTH TO SOUTHEAST FLOW ALOFT WILL ALLOW MONSOONAL MOISTURE TO BEGIN WORKING ITS WAY INTO THE SOUTHERN SIERRA NEVADA TODAY. THIS MOISTURE ALONG WITH INCREASED INSTABILITY WILL RESULT IN SCATTERED THUNDERSTORMS OVER THE SIERRA THIS AFTERNOON AND EARLY EVENING…MAINLY OVER THE HIGHER ELEVATIONS. HOWEVER…THE LOWER LEVELS OF THE ATMOSPHERE REMAIN DRY AND SOME OF THE THUNDERSTORMS MAY CONTAIN LITTLE OR NO RAIN. THUS A FIRE WEATHER WATCH FOR DRY LIGHTNING HAS BEEN ISSUED.

PLEASE ADVISE THE APPROPRIATE OFFICIALS OR FIRE CREWS IN THE FIELD OF THIS FIRE WEATHER WATCH.

$$

4. NFDRS

a. ZONE/FCST Shows whether this forecast is 24-hour trend (ZONE) or specific forecast values (FCST). Trend forecasts (ZONEs) show how parameters will change over the next 24 hours for a group of stations contained in a given NFDRS trend zone. Note that a trend zone consists of several points rather than an area. The NFDRS trend forecast applies to every station within the trend zone. The WIMS catalogue determines which stations are within a trend zone. Occasionally a station within an NFDRS trend zone is not expected to trend the same way as the rest of the stations in the zone. In those cases, specific point forecast values (FCST) should be made for that station while a zone trend forecast is done which applies to the rest of the stations in the zone group. Specific forecast values (FCST) always are placed after the trend forecasts (ZONEs).

b. **YYMMDD** Year, month, and day valid forecast time.
c. **NO** NFDRS Zone Number (or individual NFDRS station number)
d. **13** Always 1300 LST
e. **WX** Weather valid at 1300 LST tomorrow. Valid entries are:

0	clear
1	scattered clouds (1/8 to 4/8)
2	broken clouds (5/8 to 7/8)
3	overcast clouds (more than 7/8)
4	foggy
5*	drizzle
6*	raining
7*	snowing or sleeting
8	showers (in sight or at the station)
9	thunderstorm

***(Categories 5, 6, or 7 sets NFDRS components and indices to 0...use only with widespread precipitation)**

f. **TEMP** Temperature in deg F valid at 1300 LST for FCST or temperature trend + or - for ZONE
g. **RH** Relative humidity in % valid at 1300 LST for FCST or RH trend + or - for ZONE
h. **LAL1** Lightning Activity Level 1300 LST to 2300 LST
i. **LAL2** Lightning Activity Level 2300 LST to 2300 LST (next day)
j. **WIND** Wind speed in mph valid at 1300 LST for FCST or wind speed trend + or - for ZONE **(20 ft level/10 min avg)**
k. **10HR** 10-hour time lag fuel moisture in % valid at 1300 LST for FCST or trend + or - for ZONE
l. Tx Max temperature from 1300 LST to 1300 LST tomorrow
m. Tn Min temperature from 1300 LST to 1300 LST tomorrow
n. RHx Max relative humidity from 1300 LST to 1300 LST tomorrow
o. RHn Min relative humidity from 1300 LST to 1300 LST tomorrow
p. **PD1** Precipitation duration in hours 1300 LST to 0500 LST
q. **PD2** Precipitation duration in hours 0500 LST to 1300 LST
r. **WETFLAG** Y or N. Indicates whether liquid water will be on the fuels at 1300 LST. **(Use with caution – a "Y" will set all the NFDRS indices to zero!)**

The NFDRS forecast will follow the comma delimited format as shown:

ZONE,NO,YYMMDD,13,WX,TEMP(trend),RH(trend),LAL1,LAL2,WIND(trend),10HR(trend),PD1,PD2,WETFLAG
FCST,NO,YYMMDD,13,WX,TEMP,RH,LAL1,LAL2,WIND,10HR,TX,TN,RHx,RHn,PD1,PD2,WETFLAG

An example of the product, formatted for transmission into AWIPS, is displayed below:

FNUS85 KBOI DDHHMM
FWMBOI

ZONE,403,011027,13,1,-3,0,1,1,0,0,,,,,0,0,N	Zone trend (zone 403)
ZONE,404,011027,13,0,3,0,1,1,0,0,,,,,0,0,N	Zone trend (zone 404)
ZONE,102708, 011027,13,0,4,-5,1,1,,,,,0,0,N	Station trend **(WIMS cannot handle these for California)**
FCST,102709,011027,13,0,84,15,1,1,12,5,87,60,50,12,0,0,N	Station specific - **This must FOLLOW the ZONE forecasts.**

Note: Tx, Tn, RHx, and RHn are not necessary in ZONE forecasts but must be used if an individual station which is normally part of a zone group is pulled out of the zone.

5. Example ECCDA Forecast

FIRE WEATHER FORECAST FOR FORTUNA ECC DISPATCH
NATIONAL WEATHER WEATHER SERVICE - EUREKA CA
217 PM PDT WED APR 19 2006

Click on the link(s) below to go directly to forecast segments:
INTERIOR HUMBOLDT AND DEL NORTE COUNTIES INCLUDING SIX RIVERS NF AND HOOPA VALLEY
NORTH COAST INCLUDING PORTIONS OF CA NPS AND REDWOOD PARKS

.DISPATCH AREA DISCUSSION...
LOW PRESSURE WILL APPROACH NORTHWEST CALIFORNIA THURSDAY...
BRINGING INCREASED CLOUDINESS AND A SLIGHT CHANCE FOR
PRECIPITATION ALONG THE COAST. AS THE SYSTEM MOVES INLAND
FRIDAY AND SATURDAY...COOLER WEATHER WITH INCREASED RAIN
AND HIGH ELEVATION SNOW CHANCES CAN BE EXPECTED. A FEW
THUNDERSTORMS ARE POSSIBLE OVER THE MOUNTAINS ON FRIDAY.
DRY WEATHER IS EXPECTED SUNDAY BEFORE ANOTHER SYSTEM
APPROACHES THE REGION ON MONDAY.

THE FORECAST FOR:
INTERIOR HUMBOLDT AND DEL NORTE COUNTIES INCLUDING SIX RIVERS NF AND HOOPA VALLEYINLAND
PORTION OF SMITH RIVER DRAINAGE WITHIN SIX RIVERS NF
211 PM PDT WED APR 19 2006

.TONIGHT...
SKY/WEATHER.....MOSTLY CLEAR. PATCHY FOG AFTER 12 AM.
MIN TEMPERATURE.....37-40
MAX HUMIDITY.....100 PERCENT VALLEYS AND 60-70 PERCENT HIGHER
TERRAIN.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE
NORTHEAST 3 TO 5 MPH LATE IN THE EVENING.
RIDGES/UPR SLOPES....NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE
EAST 3 TO 5 MPH LATE IN THE EVENING.

.THURSDAY...
SKY/WEATHER.....PARTLY CLOUDY UNTIL 12 PM...THEN MOSTLY CLOUDY.
PATCHY FOG UNTIL 10 AM.
MAX TEMPERATURE.....65-71.
MIN HUMIDITY.....55-65 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE
WEST 5 TO 8 MPH LATE IN THE MORNING.
RIDGES/UPR SLOPES....SOUTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE
SOUTHWEST 5 TO 8 MPH LATE IN THE MORNING.

.FRIDAY...
SKY/WEATHER.....CHANCE OF RAIN...THEN SHOWERS LIKELY.
MAX TEMPERATURE.....60-63.
MIN HUMIDITY.....56-66 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 3 TO 8 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 8 MPH.

.EXTENDED...
.SATURDAY...PARTLY CLOUDY WITH CHANCE OF SHOWERS. LOWS IN THE UPPER 30S. HIGHS IN THE LOWER 60S. NORTH WINDS 3 TO 6 MPH.
.SUNDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF SHOWERS. LOWS IN THE UPPER 30S. HIGHS IN THE MID TO UPPER 60S. NORTHEAST WINDS 3 TO 6 MPH.
.MONDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF RAIN. LOWS NEAR 40. HIGHS IN THE MID 60S. SOUTHWEST WINDS 3 TO 6 MPH.

$$

THE FORECAST FOR:
NORTH COAST INCLUDING PORTIONS OF CA NPS AND REDWOOD PARKS
211 PM PDT WED APR 19 2006

.TONIGHT...
SKY/WEATHER.....MOSTLY CLEAR UNTIL 12 AM...THEN MOSTLY CLOUDY.
PATCHY FOG AFTER 12 AM.
MIN TEMPERATURE.....40-43.
MAX HUMIDITY.....100 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 4 TO 7 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 6 MPH.

.THURSDAY...
SKY/WEATHER.....MOSTLY CLOUDY. PATCHY FOG. SLIGHT CHANCE OF DRIZZLE OR RAIN.
MAX TEMPERATURE.....55-58.
MIN HUMIDITY.....64-74 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 4 TO 6 MPH SHIFTING TO THE WEST 5 TO 8 MPH LATE IN THE MORNING.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 6 MPH SHIFTING TO THE WEST 5 TO 8 MPH LATE IN THE MORNING.

.FRIDAY...
SKY/WEATHER.....MOSTLY CLOUDY. CHANCE OF RAIN...THEN CHANCE OF SHOWERS.
MAX TEMPERATURE.....54-57.
MIN HUMIDITY.....67-77 PERCENT COAST AND 52-66 PERCENT INLAND.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 3 TO 8 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 8 MPH.

.EXTENDED...
.SATURDAY...PARTLY CLOUDY WITH CHANCE OF SHOWERS. LOWS IN THE LOWER 40S. HIGHS IN THE MID 50S. NORTH WINDS 7 TO 17 MPH.
.SUNDAY...PARTLY CLOUDY. LOWS NEAR 40. HIGHS IN THE MID 50S.

NORTH WINDS 4 TO 8 MPH.
.MONDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF RAIN. LOWS IN THE
LOWER 40S. HIGHS IN THE MID 50S. SOUTHWEST WINDS 4 TO 8 MPH.

$$
THE FORECAST FOR:
INLAND PORTION OF THE KLAMATH RIVER DRAINAGE WITHIN SIX RIVERS NF AND UKONOM DISTRICT OF KLAMATH NF AND HOOPA VALLEY
211 PM PDT WED APR 19 2006

.TONIGHT...
SKY/WEATHER.....MOSTLY CLEAR. PATCHY FOG AFTER 12 AM.
MIN TEMPERATURE.....37-40
MAX HUMIDITY.....100 PERCENT VALLEYS AND 60-70 PERCENT HIGHER
TERRAIN.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE
NORTHEAST 3 TO 5 MPH LATE IN THE EVENING.
RIDGES/UPR SLOPES....NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE
EAST 3 TO 5 MPH LATE IN THE EVENING.

.THURSDAY...
SKY/WEATHER.....PARTLY CLOUDY UNTIL 12 PM...THEN MOSTLY CLOUDY.
PATCHY FOG UNTIL 10 AM.
MAX TEMPERATURE.....65-71.
MIN HUMIDITY.....55-65 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE
WEST 5 TO 8 MPH LATE IN THE MORNING.
RIDGES/UPR SLOPES....SOUTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE
SOUTHWEST 5 TO 8 MPH LATE IN THE MORNING.

.FRIDAY...
SKY/WEATHER.....CHANCE OF RAIN...THEN SHOWERS LIKELY.
MAX TEMPERATURE.....60-63.
MIN HUMIDITY.....56-66 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 3 TO 8 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 8 MPH.

.EXTENDED...
.SATURDAY...PARTLY CLOUDY WITH CHANCE OF SHOWERS. LOWS IN THE
UPPER 30S. HIGHS IN THE LOWER 60S. NORTH WINDS 3 TO 6 MPH.
.SUNDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF SHOWERS. LOWS IN
THE UPPER 30S. HIGHS IN THE MID TO UPPER 60S. NORTHEAST WINDS
3 TO 6 MPH.
.MONDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF RAIN. LOWS NEAR 40.
HIGHS IN THE MID 60S. SOUTHWEST WINDS 3 TO 6 MPH.

$$

THE FORECAST FOR:
INLAND PORTION OF VAN DUZEN AND MAD RIVER DRAINAGES WITHIN SIX RIVERS NF
211 PM PDT WED APR 19 2006

.TONIGHT...
SKY/WEATHER.....MOSTLY CLEAR. PATCHY FOG AFTER 12 AM.

MIN TEMPERATURE.....37-40
MAX HUMIDITY.....100 PERCENT VALLEYS AND 60-70 PERCENT HIGHER TERRAIN.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE NORTHEAST 3 TO 5 MPH LATE IN THE EVENING.
RIDGES/UPR SLOPES....NORTHWEST WINDS 5 TO 8 MPH SHIFTING TO THE EAST 3 TO 5 MPH LATE IN THE EVENING.

.THURSDAY...
SKY/WEATHER.....PARTLY CLOUDY UNTIL 12 PM...THEN MOSTLY CLOUDY. PATCHY FOG UNTIL 10 AM.
MAX TEMPERATURE.....65-71.
MIN HUMIDITY.....55-65 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE WEST 5 TO 8 MPH LATE IN THE MORNING.
RIDGES/UPR SLOPES....SOUTHEAST WINDS 3 TO 4 MPH SHIFTING TO THE SOUTHWEST 5 TO 8 MPH LATE IN THE MORNING.

.FRIDAY...
SKY/WEATHER.....CHANCE OF RAIN...THEN SHOWERS LIKELY.
MAX TEMPERATURE.....60-63.
MIN HUMIDITY.....56-66 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 3 TO 8 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 8 MPH.

.EXTENDED...
.SATURDAY...PARTLY CLOUDY WITH CHANCE OF SHOWERS. LOWS IN THE UPPER 30S. HIGHS IN THE LOWER 60S. NORTH WINDS 3 TO 6 MPH.
.SUNDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF SHOWERS. LOWS IN THE UPPER 30S. HIGHS IN THE MID TO UPPER 60S. NORTHEAST WINDS 3 TO 6 MPH.
.MONDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF RAIN. LOWS NEAR 40. HIGHS IN THE MID 60S. SOUTHWEST WINDS 3 TO 6 MPH.

$$

THE FORECAST FOR:
NORTH COAST INCLUDING PORTIONS OF CA NPS AND REDWOOD PARKS
211 PM PDT WED APR 19 2006

.TONIGHT...
SKY/WEATHER.....MOSTLY CLEAR UNTIL 12 AM...THEN MOSTLY CLOUDY. PATCHY FOG AFTER 12 AM.
MIN TEMPERATURE.....40-43.
MAX HUMIDITY.....100 PERCENT.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 4 TO 7 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 6 MPH.

.THURSDAY...
SKY/WEATHER.....MOSTLY CLOUDY. PATCHY FOG. SLIGHT CHANCE OF DRIZZLE OR RAIN.
MAX TEMPERATURE.....55-58.
MIN HUMIDITY.....64-74 PERCENT.
20-FOOT WINDS.....

VALLEYS/LWR SLOPES...NORTH WINDS 4 TO 6 MPH SHIFTING TO THE
WEST 5 TO 8 MPH LATE IN THE MORNING.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 6 MPH SHIFTING TO THE
WEST 5 TO 8 MPH LATE IN THE MORNING.

.FRIDAY...
SKY/WEATHER.....MOSTLY CLOUDY. CHANCE OF RAIN...THEN CHANCE OF
SHOWERS.
MAX TEMPERATURE.....54-57.
MIN HUMIDITY.....67-77 PERCENT COAST AND 52-66 PERCENT INLAND.
20-FOOT WINDS.....
VALLEYS/LWR SLOPES...NORTH WINDS 3 TO 8 MPH.
RIDGES/UPR SLOPES....NORTH WINDS 3 TO 8 MPH.

.EXTENDED...
.SATURDAY...PARTLY CLOUDY WITH CHANCE OF SHOWERS. LOWS IN THE
LOWER 40S. HIGHS IN THE MID 50S. NORTH WINDS 7 TO 17 MPH.
.SUNDAY...PARTLY CLOUDY. LOWS NEAR 40. HIGHS IN THE MID 50S.
NORTH WINDS 4 TO 8 MPH.
.MONDAY...PARTLY CLOUDY WITH SLIGHT CHANCE OF RAIN. LOWS IN THE
LOWER 40S. HIGHS IN THE MID 50S. SOUTHWEST WINDS 4 TO 8 MPH.

$$

APPENDIX C – Predictive Services Product Examples

1. **Daily PSU Product** (Note –this product is planned to be discontinued in mid July)

NORTHERN CALIFORNIA FIRE WEATHER DISCUSSION AND FIRE DANGER FORECAST
0930 PDT TUESDAY MAY 3, 2006
REDDING FIRE WEATHER CENTER

*** THIS WEATHER PRODUCT CONSOLIDATES THE FIRE WEATHER FORECASTS OF THE NATIONAL WEATHER SERVICE (NWS) INTO A GEOGRAPHIC AREA PRODUCT. SIGNIFICANT DISCREPANCIES ARE COORDINATED WITH THE NWS. ***

CURRENT NATIONAL WEATHER SERVICE FIRE WEATHER WATCHES/ RED FLAG WARNINGS: Click here

Discussion: Clouds are increasing across the area a low pressure trough nears the central California coast. This system will bring isolated light showers to the southern sections of the area with only a slight chance north. A colder stronger system is due in by Thursday, with more rain, and unseasonably low snow levels of 3500 to 4000 feet. This system will be out of the area by late Saturday. Another weak system will brush the far north end of the state Monday.

HAINES Index	LOW	MID	HIGH
Medford	3	3	2
Oakland	4	5	5
Reno	N/A	M	2

Confidence factors are defined as follows: 5- 90-100%...4-80-89%…3-70-79%…2-60-69% …1-50-59%

North Coast PSAFDRAs 100 and 105
TODAY: Confidence Factor….4
Weather: Cloudy with isolated light showers mainly south. Showers will end tonight.
Max Temps: 50s and 60s.
Humidity: Minimums 35 to 45% which will occur this morning.
Winds: Valleys and lower slopes: West to northwest 3 to 6 mph.
Upper slopes and ridges: West to northwest 4 to 11 mph.
LAL: 1
FIRE DANGER: Available during fire season.

WEDNESDAY AND THURSDAY: Confidence Factor… 5
Weather: Increasing clouds late Wednesday with rain Thursday. Snow level 3500 to 4500 feet.
Max Temps:. 50s and 60s Wednesday. Cooling Thursday, with the higher elevations in the 40s and lower elevations in the 50s to lower 60s.
Humidity: Minimums 33 to 46% Wednesday and above 50% Thursday.
Winds: Valleys and lower slopes: South to southwest 6 to 12 mph, shifting to northwest to north 7 to 15 mph Thursday afternoon.
Upper slopes and ridges: South to southwest increasing to 12 to 18 mph gusts 24 mph Wednesday afternoon shifting to northwest to north 14 to 24 mph gusts 30 mph Thursday afternoon.
LAL: 1
FIRE DANGER: Available during fire season.

And similar forecast sections for the following seven PSAs:
Mid Coast PSAFDRAs 140, 150, 154, 162, 175, 180, and 185:
Bay Area PSAFDRAs 185, 190, 490, 518, 520, 530, 540, and 553:
Northwestern Mtns PSAFDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:
Sacramento Valley and Surrounding Foothills PSAFDRAs 170, 177, 245, 246, 247, 270, 280, 300, and 305:
Northeastern California PSAFDRAs 210, 214, 216, 220, 249, 255, and 258:
Northern Sierras PSAFDRAs 244, 248, 250, 262, 282, 285, 290, 293, 330, 335, 340, 345, and 350:
Eastside PSAFDRAs 260, 265, 268, 295, 380, and 383:

2. Operational Days 1-2 Graphic Product

(To replace number 1 above. TBD: Estimated by mid July)

3. Daily-issued 7-Day Significant Fire Potential Product

Legend:

Fuel Dryness

- **Moist** - Little if any threat for large fires.
- **Marginal** - Low threat for large fires when significant weather is absent.
- **Dry** - Moderate threat for large fires when significant weather is absent.

Significant Weather

- **Lightning** - LALs of 3 or higher.
- **W** **Wind** - Sustained speeds of 20 mph or greater.
- **HD** **Hot and Dry** - Temperatures much above normal with humidity 15% or less.

"High Risk" Days

- The combination of either Marginal or Dry Fuel condtions along with a Significant Weather Trigger.

7 Day Significant Fire Potential

Issued: Thursday, July 08, 2004

Predictive Service Areas	Thu Jul 08	Fri Jul 09	Sat Jul 10	Sun Jul 11	Mon Jul 12	Tue Jul 13	Wed Jul 14
Eastern Sierra						⚡	⚡
Central Sierra						⚡	
Southern Sierra						⚡	
Sierra Foothills							
Central Coast Mtns & Vlys							
South Coast							
South Central Mountains							
Southern Mountains							
Deserts							

Weather Synopsis:
A trough currently over California will give way to a strengthening area of high pressure over Arizona and New Mexico. This will cause temperatures to warm over much of the area by late in the weekend with a warming trend continuing into much of next week. Moisture from the southeast will increase over the Sierras by early next week bringing a chance of thunderstorms to those areas by then.

Fire Potential:
With the anticipation of warmer temperatures later this weekend and next week, general fire activity will likely be increasing as fuel conditions worsen. Probabilities for large fire development will increase considerably over the higher terrain of the Sierra range Tuesday and Wednesday as lightning activity increases.

Resource Capability:
Currently, sufficient resources are available for light to moderate initial attack however should significant fire activity develop next week, additional resources will likely be requested.

For more information on this product, click here

4. MONTHLY FIRE WEATHER / FIRE DANGER OUTLOOK

May 2006

1. REPORTING UNIT: Northern California Geographic Area

2. DATE: April 26, 2006

THIS COMING MONTH	BELOW NORMAL		NORMAL		ABOVE NORMAL	
THIS SEASON	BELOW NORMAL		NORMAL		ABOVE NORMAL	

4. FIRE WEATHER OUTLOOK

Review of April 2006 weather (through the 26th):

The trends predicted on the April Outlook for northern CA worked out quite well, as we saw a transition from wet and cool weather in the first half of the month to a significantly warmer and drier second half. Precipitation in the first half of April was even more than expected, reaching to as much as 400% of normal. With relatively cool temperatures the snowpack in higher mountain areas continued to increase through mid-month. **Figure 1**depicts precipitation percent-of-normal from April 1 to 25, while **Figure 2** shows temperature departures from normal over the same period. In North Ops, only the NW corner of CA had less than 150% of normal April precipitation, with a small portion of Siskiyou Co. below normal. April was not a particularly windy month, with variable wind directions in the light to moderate speed categories. The last storm before mid-month did produce stronger southerly winds, with gusts 40-55 mph in the windier exposed areas. A composite map for lightning strikes for April 1-26 (not shown) indicates quite a bit of activity occurred in the southeast half of the Geographic Area, especially within an 80-mile radius of Lake Tahoe.

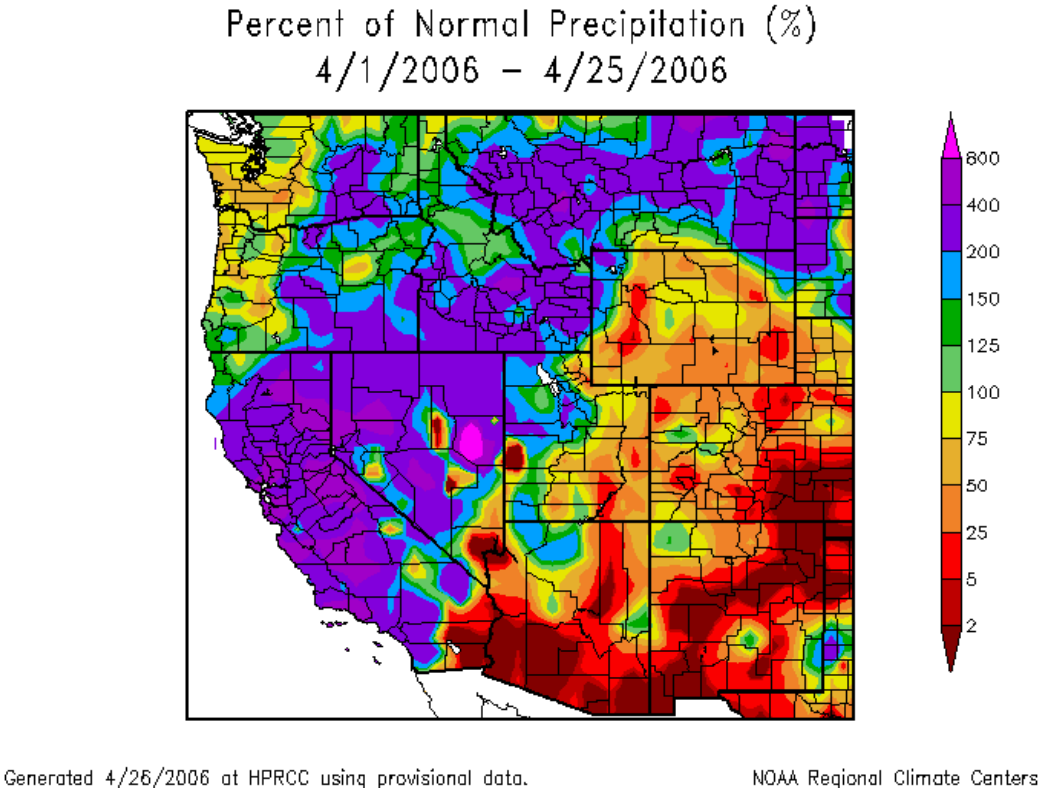


Figure 1

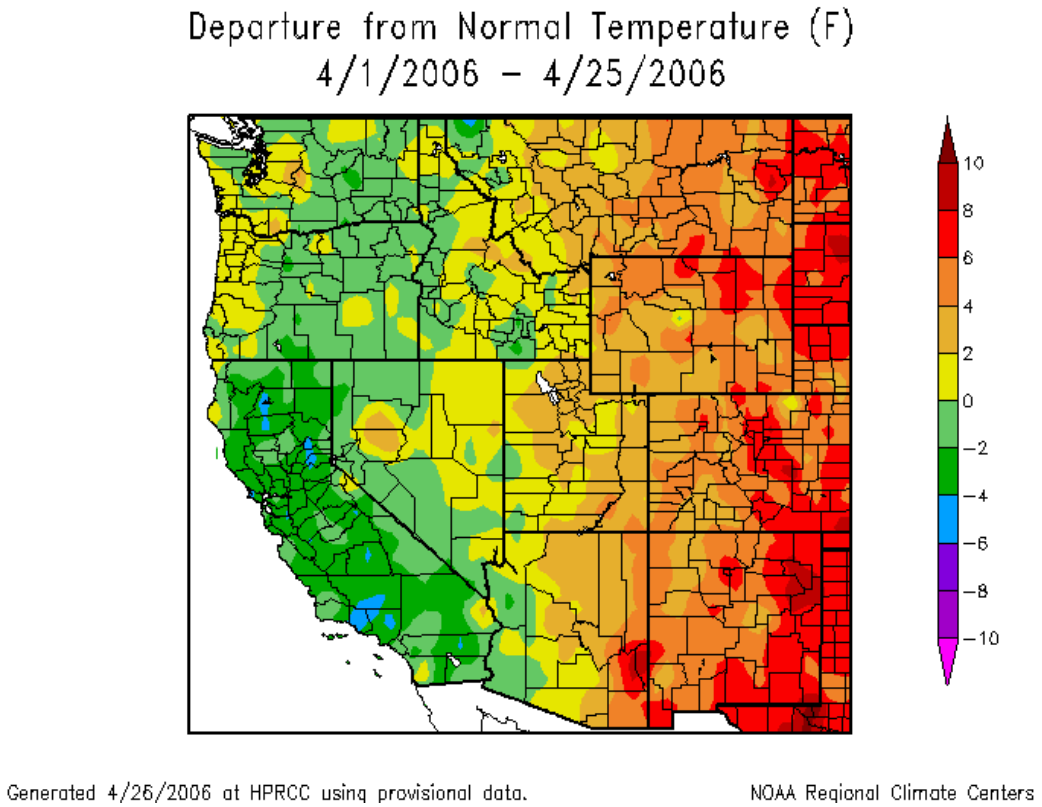


Figure 2

FORECAST DISCUSSION FOR MAY 2006:

A La Nina pattern (cooler than normal east-Pacific ocean water) that reached borderline-moderate strength has been gradually fading in the past two months, after it peaked in about late February. The lagged effects of this La Nina change likely helped deliver northern CA from the recent seven week long cool, moist pattern. The longer-range weather maps for the first third of May have lately been fairly consistent with maintaining a fairly strong high pressure influence over northern CA. Other longer-range models, as well as historical analogies using month-by-month precip patterns at Redding, also favor at least a slightly warmer and drier than average May. This is the basis for the forecasts below, which have a confidence level of 60-70% (fairly high for monthly projections).

Look for the mountain snowpack below 6000' to diminish steadily in May, with slower reductions of the deep snow-pack at elevations above that. Typically May is a month with several 1-3 day foehn wind (north to east) events in North Ops, and that is expected to be the case this year. These type winds keep lower elevations warmer and drier than normal (including coastal areas). If they do turn out to have above-normal frequency or duration this May, they will aid the curing rate of what is currently a lush annual grass crop in low-elevation valleys. At this point, an educated guesstimate for May lightning activity would be for a near-normal activity overall. A predominance of stable weather patterns would work toward keeping lightning less than normal, but the melting snow fields in the high country can also boost humidity locally in the afternoons, aiding weak convective activity.

5. FUELS

FINE - GRASS STAGE	GREEN		CURED			
NEW GROWTH	SPARSE		NORMAL		ABOVE NORMAL	

LIVE FUEL MOISTURE (sage, deciduous, conifer): **NA**

1000 HOUR DEAD FUEL MOISTURE: **Above 20% all areas** (per 4/25 WFAS map)

6. ACTUAL OCCURRENCE / ACRES BURNED YEAR TO DATE:

Fires	**Acres**	**approximations**
~80	**~3000**	

WRITTEN FORECAST SUMMARY FOR MAY 2006:

Geographic Area	Northern California
Precipitation Outlook	Ranging from 40-90% of normal.
Temperature Outlook	**Inland:** ranging from + 1.0 to +3.5 º F departure from normal. **Coast:** near normal to + 1.5º departures
Fuels and Fire Danger Concerns	Lower elevations: No real concerns… Brush will continue greening up, while annual grasses finish greening and begin curing. Moisture content of large dead fuels should dry gradually during dry periods, and will generally remain at or above normal levels for May. Higher elevations: No concerns… Snowpack will reduce, with greenup beginning shortly after when fuels become snow-free. Large dead fuels will remain moist or snow-covered thru May.
Prescribed fire implications	May should provide some good windows for prescribed burning in several fuel types. Some high elevation projects or those on higher north aspects may need to wait until June.
Miscellaneous	The GACC has adequate resources at this time.

For additional input regarding forecast May weather, see the NWS 30- and 90-day temp and precipitation maps for the month. The recently updated forecasts can be found at this URL: **http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif**.

5. SEASONAL OUTLOOKS

The latest Seasonal assessments can be found at the following URLs:

North: http://gacc.nifc.gov/oncc/predictive/outlooks/seasonal_outlook.pdf
South: http://gacc.nifc.gov/oscc/predictive/outlooks/myfiles/assessment.pdf

March 2006

1. **REPORTING UNIT**: **Northern California Geographic Area**

2. **DATE**: **March 1 2006**

POTENTIAL FOR SERIOUS/CRITICAL FIRE PROBLEMS:

THIS COMING MONTH	BELOW NORMAL		N O R M AL		ABOVE NORMAL	
THIS SEASON	BELOW NORMAL		N O R M AL		ABOVE NORMAL	

RECENT WEATHER AND TRENDS:

The Northern CA weather assessment for February has verified quite well. The first 10 days of February were drier than normal Area-wide, then we saw a switch to an occasionally wetter pattern. The current fair weather pattern will be followed by one more rainy period Feb. 27-28. Figure 1 shows this year's Feb. 1-23 precip, as a percentage of normal. Mean temperatures have averaged 0.5 to 4.0ºF above normal across most of North Ops in February, with a cold exception in parts of Lassen Co. where temps have been 4-6º F below normal. The warmest spot in the north state has been in the central Sacramento Valley, at 4-6º F above normal.

The storms that brought February's precipitation were almost exclusively slow-moving closed lows, and none had widespread strong winds. With the mild temps, and adequate to plentiful precipitation so far this winter, low elevations are showing a normal to taller-than-normal annual grass crop of plush green. The end of January snowpack ranged from just under normal near the Trinity Alps to 120-140% of normal in the northern Sierra. The end-of-February percentages in the north, when they soon become available, could show some hefty dips. This is due to the relative dryness in those northern PSAs, as shown in Figure 1.

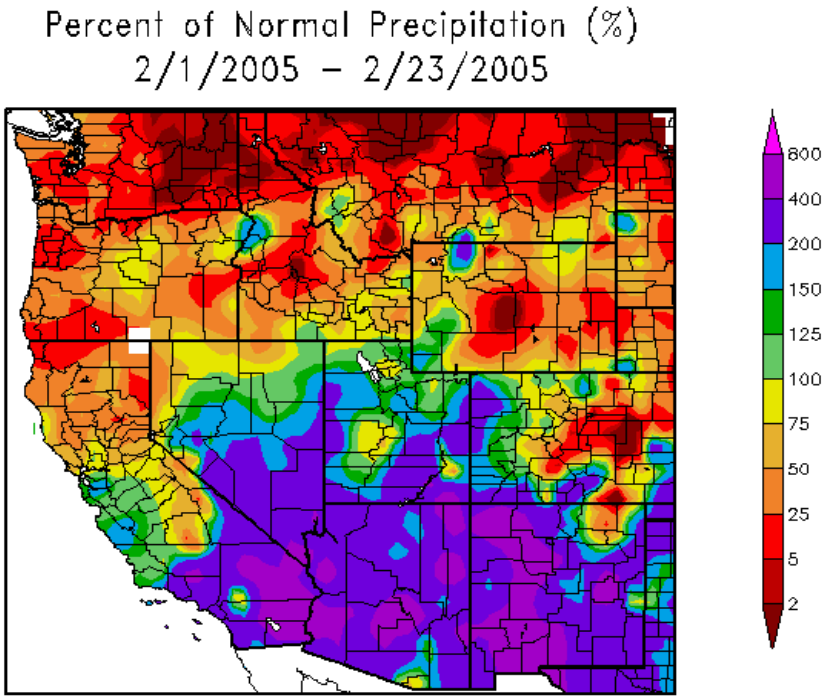


Figure 1

DISCUSSION:

Last March had record-setting warmth, and saw a previously solid snowpack dwindle rapidly. At this time, we don't expect an exceptionally warm March again this year. However, mean temperatures (overall) will likely average at least a little above normal, owing to the continued presence of large-scale high pressure aloft over the NW portion of the continental U.S.. The latest weather map runs show a continued prominent split in the Pacific flow during at least the first third of March. This will generally keep northern CA out of the Pacific storm track after March 2nd to possibly mid-month. That pattern will likely adjust to one that is at least slightly wetter during the second half of March.

5. FUELS

FINE - GRASS STAGE	GREEN		CURED			
NEW GROWTH	SPARSE		NORMAL		ABOVE NORMAL	

LIVE FUEL MOISTURE (sage, deciduous, conifer):

1000 HOUR DEAD FUEL MOISTURE:

6. ACTUAL OCCURRENCE /ACRES BURNED YEAR TO DATE: Fires Acres

WRITTEN SUMMARY:

MARCH 2006 FORECAST: **NORTHERN CALIFORNIA GEOGRAPHIC AREA**

Precipitation: Probably no significant wet spells, but a dry period of up to 10-12 days is possible during the first half of the month. Closed lows will likely continue to play a prominent role in any precip events. Northern California monthly precip totals are forecast to fall into a 50-90% of normal range by month's end.

Temperature Outlook: Near to a little above March normals (Temperature DFNs predicted to fall a 0 to +3.0ºF range).

Fuels and Fire Danger Concerns: None during March

Prescribed Fire Implications: Fuels are at present generally moist, or snow-covered. With the above weather pockets of prescribed burning could open up at mid/lower elevations by month's end.

Miscellaneous: Since the early 1960s when Redding (near the geographic center of North Ops) receives below normal precipitation in both January and February, March too is often drier than normal (in 8 of 13 cases). When you factor in a substantially wet December from the year just prior (such as we had in 2004) March still remained drier than normal in 3 of 4 cases.

For additional input regarding March weather, see the NWS 30- and 90-day temp and precip maps for the month. The recently updated forecasts can be found at this URL:

http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif.

California Seasonal Fire Weather/ Fire Danger Outlook

April 2006

California Executive Summary

This preliminary outlook is a product of the National Seasonal Assessment Workshop held April 4 -7, 2006 in Boulder, Colorado. The interagency workshop brought together experts in the field of climatology, meteorology, fuels, and fire danger.

The objective of this workshop was to assess all factors that will affect wildland fire potential during the 2006 wildland fire season. The outlook is based on past developments, current conditions, trends, and predictions for the next six months (April through September).

The objectives of the California Executive Summary are to:

- Summarize winter and early spring weather and fuel conditions to date.
- Provide a first-look prognosis of the 2006 wildland fire potential in California, based on available fire weather and fuel predictions.
- Highlight any areas of concern related to fuel conditions across the state.
- Highlight management implications and concerns.
- Provide the framework for the more comprehensive outlook in late June.

This summary was generated prior to the significant weather months of April and May. Therefore, while it should aid California wildland fire managers in 2006 fire season preparedness, and add early insight, it is not the final word. A more comprehensive California Seasonal Fire Weather/ Fire Danger Outlook will be published in separate North Ops and South Ops documents, which will come by the end of May in South Ops and by late June in North Ops. These documents will give increased detail regarding all aspects of the coming fire season. They will also provide any necessary updates to the July through October climate forecasts used at the writing of this executive summary. In addition to this outlook, the GACC Predictive Service Units (PSU) issue detailed monthly assessments of fire weather and fire danger.

Recent and Predicted Weather

A La Nina pattern (cooler than normal tropical eastern Pacific) which developed rapidly this past winter and peaked near moderate strength in February, resulted in varying precipitation amounts across the state. In North Ops, precipitation through February ranged from 70% of normal in the south, to 140% of normal in the wettest areas in the north. By March, a shift to a very wet and cool pattern occurred and brought near record breaking snowfall across the higher elevations for the month. Currently, North Ops has received 120 to 200% of normal precipitation for the season, with the mid to high-elevation snowpack much above average.

The bulk of the cool season has been much drier in southern California, with precipitation amounts varying generally between 50% of normal in the south to a little more than 120% of normal across the central portions of the state. Recent rains over the last four to six weeks have alleviated some of the drier conditions across southern portions of California.

Above normal rainfall and below normal temperatures will continue across much of California through at least late April. A transition to a warmer and drier pattern, relative to normal, is anticipated to occur sometime in May. Near normal temperatures and precipitation are then expected statewide for the latter half of May and into June, with the possibility of North Ops rising to a few degrees above normal. For the summer period, we can expect a continuation of near normal temperatures in the coastal areas, but the interior portions of the state will likely experience near to slightly above normal

temperatures. For this period, precipitation is forecast to be at or a little below normal, but it should be noted that average rainfall during the summer for much of the state is insignificant. The confidence factor in these weather forecasts is about average.

Fuels Discussion

Dead fuels are currently either snow-covered or have moisture contents near to above normal, especially in the northern two-thirds of the state. A continuing area of concern is the large amount of bug-killed timber on the national forests from about the Sequoia NF southward. The arrangement of these fuels is changing from aerial to surface, as dead trees continue to fall. Snowpacks and continued wet weather will delay greenup dates for live fuels, particularly at mid and upper elevations. One effect will be that live fuel moistures will remain at high levels longer into the fire season than normal.

Fire Season Outlook

With the recent increase in late season precipitation and delayed greenup, the onset of this year's fire season will generally be later than normal in North Ops and may be later than normal in portions of South Ops. The current and expected weather and fuel conditions will lead to below normal fire potential over the central and northern Sierras, and in portions of northwest California well into fire season. Near normal fire potential is expected elsewhere across the state.

Management Implications

- With the anticipated later start to the fire season, there should not be a need to bring on resources any earlier than normal.
- California resources will likely be available for out-of-state incidents during the early part of fire season.
- Prescribed burn windows in northern California maybe of normal or longer length, but would start and end later than usual. However, a delayed window will be impacted by potential resource drain to incidents in other regions.
- Funding level reductions could result in diminished initial attack resource capability, thus increasing burned acres to above average levels.


BELOW NORMAL
NORMAL
NORMAL
BELOW NORMAL
NORMAL
NORMAL
2006 CALIFORNIA FIRE SEASON OUTLOOK
April 7, 2006

Team Members

John Snook – Fire Weather Meteorologist, Redding Interagency Fire Weather Center, USDA Forest Service

Tom Rolinski – Fire Weather Meteorologist, Riverside Interagency Fire Weather Center, USDI Bureau of Land Management

Bruce Risher – Intelligence Officer, USDA Forest Service, Southern California Geographic Area Coordination Center

Mark Steele – Intelligence Officer, USDA Forest Service, Northern California Geographic area Coordination Center.

Also contributing: Ron Hamilton, Mike Lococo, Beth Little, Larry Hood, Russ Gripp

APPENDIX D – High Season Coordination Calls

Predictive Services Units and National Weather Service Coordination Calls

Coordination conference calls will be conducted as needed between the Predictive Services Units (PSUs) and the National Weather Service (NWS) Weather Forecast Offices (WFOs) during fire season. The purpose of the call is to produce seamless products between WFOs and also between the PSU and WFOs. Calls should be brief and to the point.

Calls will be at 0830 PDT during the fire season.

The Predictive Services Units meteorologist will facilitate the call.

Normally, there will be two calls. One will be for the north and the other for the south. There are 3 WFOs that have forecast areas in both the north and the south. Routinely, Monterey will be on the north and south calls, andwhile Reno and Sacramento will be on the north call. In some instances, one statewide call will be conducted.

Deployed IMETs should be included in the calls.

The PSUs will place an unpublished message on their Internet web page by 0800 PDT to inform the WFOs if a call is necessary, and which WFOs need to be on it.

The focus of the calls will be in the short term (72 hours).

Calls will be conducted when one or more of the following is occurring:

- Fire Weather Watch/Red Flag Warning is in effect.
- A critical fire weather pattern is expected to develop.
- Large wildfires or wildfires with IMETs deployed
- California is in Planning Level IV or V.
- The PSU assessment conflicts with the WFO forecast, or there is a discrepancy between adjoining WFO forecasts. The PSUs will use the NWS IFPS “trigger points” for guidance. (However, coordination may be appropriate at lower thresholds.)
    - MaxT/MinT — 5 deg F except 7 deg F in complex terrain
    - RH — 5% except 10% in complex terrain
    - Prob. Of Precip — 20%
    - Wind Speed (2 min) — 12 MPH except 18 MPH in complex terrain
    - Wind Direction — 45 deg except 60 deg in complex terrain.
    - LAL — 2 except for a valid discrepancy between wet and dry thunderstorms
    - Haines Index — 2 except for 3 in complex terrain.

APPENDIX E – Backup Spot Forecast Request Form (WS FORM D-1)

WS FORM D-1
(1-2005)
(Supersedes Previous Editions)

SPOT REQUEST
(See reverse for instructions)

U.S. Department of Commerce
NOAA
National Weather Service

Please call the NWS Weather Forecast Office (WFO) when submitting a request and also after you receive a forecast to ensure request and forecast were received.
Please provide feedback to WFO on forecast.

1. Time†	2. Date	3. Name of Incident or Project	4. Requesting Agency

5. Requesting Official	6. Phone Number	7. Fax Number	8. Contact Person

9. Ignition/Incident Time and Date

10. Size (Acres)

11. Type of Incident
- ☐ Wildfire
- ☐ Prescribed Fire
- ☐ Wildland Fire Use (WFU)
- ☐ HAZMAT
- ☐ Search And Rescue (SAR)

12. Reason for Spot Request (choose one only)
- ○ **Wildfire**
- ○ **Non-Wildfire** Under the Interagency Agreement for Meteorological Services (USFS, BLM, NPS, USFWS, BIA)
- ○ **Non-Wildfire** State, tribal or local fire agency working in coordination with a federal participant in the Interagency Agreement for Meteorological Services
- ○ **Non-Wildfire** Essential to public safety, e.g. due to the proximity of population centers or critical infrastructure.

13. Latitude/Longitude:

14. Elevation (ft, Mean Sea Level)
Top: **Bottom:**

15. Drainage

16. Aspect

17. Sheltering
- ☐ Full
- ☐ Partial
- ☐ Unsheltered

18. Fuel Type: __Grass __Brush __Timber __Slash __Grass/Timber Understory __Other_____
Fuel Model: 1,2,3 4,5,6,7 8,9,10 11,12,13 2,5,8

19. Location and name of nearest weather observing station (distance & direction from project):

20. Weather Observations from project or nearby station(s): (Winds should be in compass direction e.g. N, NW, etc.)

Place	Elevation	†Ob Time	20 ft. Wind Dir	20 ft. Wind Speed	Eye Level Wind. Dir	Eye Level Wind. Speed	Temp. Dry	Temp. Wet	Moisture RH	Moisture DP	Remarks *(Relevant Weather, etc)*

21. Requested Forecast Period
Date

Start _____

End _____

Forecast needed for:
- ☐ Today
- ☐ Tonight
- ☐ Day 2
- ☐ Extended

22. Primary Forecast Elements (Check all that are needed) *(for management ignited wildland fires, provide prescription parameters):*

	Needed:
Sky/Weather	☐
Temperature	☐
Humidity	☐
20 ft Wind	☐
Valley	☐
Ridge Top	☐
Other (Specify in #23)	☐

23. Remarks (other needed forecast elements, forecast needed for specific time, etc.)

24. Send Forecast to: ATTN:	25. Location:	26. Phone Number: Fax Number:

27. Remarks (Special requests, incident details, Smoke Dispersion elements needed, etc.):

EXPLANATION OF SYMBOLS: † Use 24-hour clock to indicate time. Example: 10:15 p.m. = 2215; 10:15 a.m. = 1015
Indicate local standard time or local daylight time

WS FORM D-1, January 2005 INSTRUCTIONS:

I. Incident Personnel:

1. Complete items 1 through 27 where applicable.
   a. Example of weather conditions on site:

13. Weather Observations from project or nearby station(s):

Place	Elevation	†Ob Time	20 ft. Wind		Eye Level Wind.		Temp.		Moisture		Remarks *(Relevant Weather, etc.)*
			Dir	Speed	Dir	Speed	Dry	Wet	RH	DP	
Unit G-50	1530'	0830	NW	6-8	NW	3-5	32		72		Observations from unit RAWS station, 50% cloud cover.

   b. If the incident (HAZMAT, SAR) involves marine, put the wave/swell height and direction in the Remarks section.

2. Transmit in numerical sequence or fax to the appropriate Weather Forecast Office. (A weather forecaster on duty will complete the special forecast as quickly as possible and transmit the forecast and outlook to you by the method requested)
3. Retain completed copy for your records.
4. **Provide feedback to NWS utilizing separate page.** Be sure to include a copy of the spot forecast with any feedback submission including forecaster's name. Feedback to NWS personnel is imperative to assist with future forecasts. Remember, feedback on correct forecasts is equally as valuable as feedback on incorrect forecasts! If spot forecast is significantly different than conditions on site, a second forecast may be required.

II. ALL RELAY POINTS should use this form to insure completeness of date and forecast. A supply of this form should be kept by each dispatcher and all others who may be relaying requests for forecasts or relaying completed forecasts to field units.

III. Forms are available from your local National Weather Service Weather Forecast Office. They may also be reproduced by other agencies as needed, entering the phone number and radio identification if desired.

NOTICE: Information provided on this form may be used by the National Weather Service for official purposes in any way, including public release and publication in NWS products. False statements on this form may be subject to prosecution under the False Statement Accountability Act of 1996 (18 U.S.C. § 1001) or other statutes.

APPENDIX F - NFDRS Table - Site Information, Owners, and NWS Responsibilities

EKA = NWS Eureka, HNX = NWS Hanford, VEF = NWS Las Vegas, LOX = NWS Oxnard, MFR = NWS Medford, MTR = NWS Monterey, REV = NWS Reno, STO = NWS Sacramento, SGX = NWS San Diego

STATION NAME WIMS	WIMS ID	AGENCY	UNIT	WFO	FCST ZONE	LATITUDE	LONGITUDE	ELEV
ACTON	45438	L Gov	LAC	LOX	506	34.445833	-118.200000	2600
ALDER POINT	40423	State	HUU	EKA	556	40.186667	-123.590278	923
ALDER SPRINGS	41101	FS	MNF	STO	595	39.651389	-122.723611	4555
ALPINE FIRE STATION	45701	FS	CNF	SGX	509	32.834444	-116.739722	2053
AMMO DUMP	45738	DOD	MCP	SGX	508	33.381389	-117.285556	1068
ANACAPA ISLAND		NPS		LOX		34.015833	-119.359722	277
ANZA	45616	State	RRU	SGX	513	33.555000	-116.673056	3920
APPLE VALLEY	45117	BLM	CDD	SGX	514	34.600000	-117.168333	3100
ARBUCKLE BASIN	40632	State	SHU	STO	595	40.437778	-122.830833	1900
ARROYO GRANDE	44915	State	SLU	LOX	500	35.191944	-120.431667	615
ARROYO_SECO	44301	FS	LPF	MTR	522	36.230000	-121.491667	980
ASH CREEK	40244	FS	SHF	MFR	584	41.276944	-121.979444	3700
ASH MOUNTAIN	44701	NPS	KNP	HNX	529	36.491389	-118.825278	1730
ASH VALLEY	40726	BLM	SUD	SUD	572	41.051944	-120.686111	5100
BACKBONE	40518	FS	SHF	EKA	591	40.889167	-123.142222	4700
BALD MOUNTAIN	42603	FS	ENF	STO	538	38.905556	-120.697222	4613
BANGOR	41201	State	BTU	STO	596	39.398333	-121.400000	840
BANNING	45601	FS	BDF	SGX	510	33.975000	-116.858330	3750
BARNABE	42308	L Gov	MRN	MRN	559	38.028056	-122.702222	810
BATTERSON	44207	FS	SNF	HNX	528	37.378056	-119.618333	3160
BEAR FLAT	40313	FS	MDF	REV	590	41.295278	-120.313889	5889
BEAR PEAK	44730	BLM	BBD	HNX	530	35.881944	-118.075556	8228
BEAR VALLEY	45007	State	KRN	MTR	562	35.139722	-118.625000	4995
BEAUMONT	45617	State	RRU	SGX	510	33.930556	-116.939722	2680
BEAVER	42601	FS	ENF	STO	538	38.488333	-120.325000	5000
BELL CANYON	45735	L Gov	ORC	SGX	509	33.541667	-117.591667	700
BEN BOLT	42612	State	AEU	STO	552	38.601389	-120.933611	1500
BEN LOMOND	43809	State	CZU	MTR	549	37.131667	-122.170000	2630
BENTON	43708	FS	INF	REV	518	37.843056	-118.477778	5450
BEVERLY HILLS	45442	L Gov	LAC	LOX	501	34.125000	-118.412222	1260
BIG BAR	40501	FS	SHF	EKA	591	40.743333	-123.250000	1500
BIG PINE FLAT	45102	FS	BDF	SGX	511	34.319444	-117.013056	6861
BIG PINES	45401	FS	ANF	LOX	507	34.378889	-117.691944	6917
BIG ROCK	42310	L Gov	MRN	MTR	559	38.039444	-122.570000	1500
BIG SUR	44302	FS	LPF	MTR	521	36.235556	-121.785000	450
BIGHILL	40402	BIA	HIA	EKA	555	41.097500	-123.635833	3570
BLACK DIAMOND	43008	L Gov	EBY	MTR	547	37.950000	-121.884444	1600
BLACKROCK	44722	FS	SQF	HNX	534	36.093611	-118.261111	8100
BLUE DOOR	40725	BLM	NOD	REV	572	41.054722	-120.337500	5615
BLUE RIDGE (KNF)	40203	FS	KNF	MFR	586	41.269444	-123.187500	5880

BLUMTN	43203	FS	STF	STO	540	38.340000		6067
BOGARD	40703	FS	LNF	REV	598	40.598056	-121.083056	5686
BOONVILLE	41001	State	MEU	EKA	557	38.987222	-123.362500	940
BRADLEY	44303	State	BEU	MTR	523	35.864444	-120.800000	540
BRANCH_MOUNTAIN	44901	FS	LPF	LOX	525	35.188889	-120.083333	3770
BRAZZI RANCH	40242	State	SKU	MFR	588	41.685278	-122.594167	3000
BRECKENRIDGE	45009	FS	SQF	HNX	534	35.450556	-118.583889	7548
BRIDGEPORT	43702	FS	HTF	REV	576	38.271944	-119.289167	6650
BRIONES	43010	L Gov	EBY	MTR	547	37.934167	-122.117778	1450
BROOKS	42202	State	LNU	STO	558	38.719444	-122.142222	360
BRUSH MTN L.O.	40404	FS	SRF	EKA	555	40.917222	-123.667500	3988
BUCK MEADOWS	43603	FS	STF	STO	539	37.823333	-120.097500	3200
BULL FLAT	40728	BLM	NOD	REV	572	40.480833	-120.113889	4395
BURNS CANYON	45125	BLM	CDD	SGX	516	34.208333	-116.620833	6000
CALAVERAS RD	43405	L Gov	SCU	MTR	547	37.553056	-121.843889	1230
CALLAHAN #2	40245	FS	KNF	MFR	587	41.299722	-122.824444	3911
CAMERON FIRE STATION	45704	FS	CNF	SGX	513	32.721111	-116.463889	3443
CAMP 9	45441	L Gov	LAC	LOX	506	34.361667	-118.421667	4000
CAMP ELLIOTT						32.859167	-117.105556	539
CAMP SIX LOOKOUT	40101	FS	SRF	EKA	556	41.830833	-123.876389	3778
CAMPO SECO	43209	State	TCU		539	38.223611	-120.866389	399
CANBY	40303	FS	MDF	MFR	590	41.434167	-120.867778	4312
CARPENTER RIDGE	41213	State	BTU	STO	597	40.068611	-121.582500	4812
CARRIZO	44916	BLM	BBD	LOX	525	35.096389	-119.772778	2490
CASE MOUTAIN	44733	BLM	BBD	HNX	529	36.410833	-118.809167	6450
CASE SPRINGS	45731	DOD	MCP	SGX	508	33.445278	-117.418056	2320
CASHMAN	40916	FS	PNF	STO	599	40.001667	-120.915000	4447
CASITAS	45308	FS	LPF	LOX	504	34.408056	-119.370278	640
CATHEYS VALLEY	44114	State	MMU	HNX	528	37.468056	-120.110556	1200
CEDAR GROVE	44719	NPS	KNF	HNX	534	36.787778	-118.656111	4720
CHEESEBORO	45313	NPS	SAMO	LOX	505	34.184722	-118.717222	1650
CHESTER	40904	FS	LNF	STO	597	40.289722	-121.085278	4525
CHICO	41210	State	BTU	STO	596	39.711944	-121.778889	230
CHILAO	45436	FS	ANF	LOX	507	34.331667	-118.030278	5450
CHIM PK	44721	BLM	BDD	HNX	530	35.900000	-118.000000	6240
CHUCHUPATE	45302	FS	LPF	LOX	503	34.806389	-119.012778	4900
CLAREMONT	45443	L Gov	LAC	SGX	509	34.136944	-117.706944	1645
CLARK TRN CTR	45624	State	RRU	SGX	509	33.876667	-117.308889	1720
CLEAR CREEK	45405	FS	ANF	LOX	506	34.271111	-118.152500	3000
COHASSET	41211	State	BTU	STO	596	39.870000	-121.769167	1670
COLBY MTN	40801	FS	LNF		597	40.150000	-121.533000	6004
COLLINS BALDY LO	40237	FS	KNF	MFR	587	41.775000	-122.950278	5493
CONVERSE	45105	FS	BDF	SGX	511	34.194167	-116.913056	5618
COOSKIE MOUNTAIN	40422	State	HUU	EKA	560	40.256944	-124.266111	2950
CORNING	40814	State	TGU	STO	595	39.938889	-122.169722	294
CORONA_FIRE STATION	45618	FS	CNF	SGX	509	33.875000	-117.549167	620
CORRALITOS	43802	State	CZU	MTR	550	36.991111	-121.797778	450

COUNTY LINE	41410	BLM	NOD	STO	557	39.018889	-122.411944	2085
CRANE	44102	NPS	YNP	HNX	531	37.766700	-119.816700	6644
CRANSTON	45603	FS	BDF	SGX	512	33.740278	-116.841389	1950
CRAZY PEAK	40106	FS	SIF	MFR	621	41.976389	-123.612222	3970
CRESTVIEW	43709	FS	INF	REV	518	37.745000	-118.983333	7600
DEL VALLE	45445	L Gov	LAC	LOX	505	34.431111	-118.682778	1278
DELNORTE		CSUN		LOX		34.009167	-119.654167	800
DEMOCRAT	45002	FS	SQF	HNX	530	35.531667	-118.630278	2380
DESCANSO FIRE STA	45707	FS	CNF	SGX	513	32.857222	-116.621667	3555
DEVIL'S GARDEN	40309	State	LMU	MFR	590	41.530000	-120.671389	5022
DEVORE	45113	State	BDU	SGX	510	34.221111	-117.403056	2080
DIABLO_GRANDE	43502	State	SCU	MTR	546	37.329167	-121.293889	1850
DINKEY	44521	FS	SNF	HNX	533	37.066389	-119.039444	5662
DOG VALLEY	41302	FS	TYF	REV	450	39.561944	-120.047778	5976
DOYLE	40724	BLM	CDD	REV	450	40.026667	-120.106111	4240
DUNCAN PEAK	41901	FS	TNF	STO	536	39.143889	-120.508889	7100
EAGLE PEAK	40802	FS	MNF	STO	595	39.927778	-122.656944	3713
EEL RIVER (MNF)	41005	FS	MNF	EKA	557	39.825278	-123.082500	1500
EEL RIVER CAMP	40421	State	HUU	EKA	556	40.138333	-123.823611	470
EL CARISO FIRE STA	45619	FS	CNF	SGX	509	33.647222	-117.411111	2730
EL MIRAGE	N/A	N/A	N/A	VEF	543	34.634444	-117.548889	2880
ESPERANZA	43208	State	TCU	STO	539	38.243056	-120.514444	2512
FANCHER CREEK	44516	State	FKU	HNX	528	36.900000	-119.500000	920
FAWNSKIN	45101	FS	BDF	SGX	511	34.266111	-116.898889	6900
FENCE MDW	44503	FS	SNF	HNX	532	36.961389	-119.175000	5256
FIGUEROA	45201	FS	LPF	LOX	500	34.734444	-120.006667	3200
FISH CREEK MTN.	45802	BLM	CDD		232	32.990278	-116.066944	760
FIVE CENT	40520	FS	SHF	EKA	591	40.759722	-122.930833	2550
FIVE MILE	N/A	N/A	N/A	VEF	543	35.871667	-117.918333	4150
FLORES	45733	DOD	MCP	SGX	508	33.288889	-117.438900	100
FORT ORD #1						36.628889	-121.757500	578
FORT ORD 2	44321	BLM	BBD	MTR	521	36.626944	-121.786389	490
FOUNTAIN SPRINGS	44731	State	TUU	HNX	529	35.892222	-118.915000	210
FREMONT CANYON	45736	L Gov	ORC	SGX	509	33.808056	-117.711111	1781
FRIEND MTN	40512	FS	SHF	EKA	591	40.505000	-123.341667	4000
GASQUET	40102	FS	KNF	EKA	556	41.845278	-123.966944	500
GOLDEN	45119	BLM	CDD	VEF	543	35.000000	-115.666666	4100
GOOSE VALLEY_FIRE ST	45724	FS	CNF	SGX	509	33.074167	-116.845000	1530
GORDON	40730	FS	LNF	REV	598	40.758611	-120.896111	6200
GRANITE MTN.	45124	BLM	CDD	VEF	543	34.535556	-117.026000	4720
GRASS MOUNTAIN	45449	FS	ANF	LOX	506	34.640833	-118.414167	4626
GRASSHOPPER	40721	State	LMU	REV	598	40.782778	-120.781667	6050
GREEN SPRING	43613	State	TCU	STO	539	37.833056	-120.500000	1020
GRIZZLY FLATS	42613	FS	ENF	STO	538	38.619722	-120.561389	3760
HASTINGS	44319	State	BEU		522	36.388889	-121.551389	1824
HAWKEYE	42010	State	LNU	MTR	559	38.781667	-122.916944	2000
HAYFORK	40503	FS	SHF	EKA	591	40.550000	-123.165000	2323

HELL HOLE	42608	FS	ENF	STO	538	39.071667	-120.421667	5240
HENNINGER FLATS	45439	L Gov	LAC	LOX	509	34.193056	-118.086944	2530
HERNANDEZ	44409	State	BEU	MTR	524	36.383056	-120.853889	3752
HIGH GLADE LOOKOUT	41402	FS	MNF	EKA	595	39.208333	-122.808333	4840
HIGH SIERRA	44520	FS	SNF	HNX	533	37.314722	-119.038333	7403
HOLLISTER	44406	State	BEU	MTR	523	36.842222	-121.362222	423
HOOPA	40408	BIA	HIA	EKA	555	41.047778	-123.671389	375
HORSE LAKE	40727	BLM	NOD	REV	572	40.630556	-123.080556	5100
HORSE THIEF SPRING	45129	BLM	CDD	VEF	543	35.770556	-115.909167	5000
HUNTER LIGGET	44317	FS	LPF	MTR	522	36.011667	-121.241700	1100
HUNTER MOUNTAIN	N/A	N/A	N/A	VEF	543	36.562500	-117.474000	6880
HURLEY	44517	State	FKU	HNX	529	37.015556	-119.560833	1225
INDIAN WELL	40233	NPS	BNP	MFR	590	41.734722	-121.534167	4770
INDIAN WELLS CANYON	45015	FS/BLM	CDD		530	35.685000	-117.889444	4000
JARBO GAP	41214	State	BTU		599	39.735833	-121.488889	2490
JAWBONE	45013	FS/BLM	CDD		530	35.294722	-118.226389	4300
JERSEYDALE	44105	FS	SNF	HNX	528	37.543611	-119.839722	3900
JOHNSONDALE	44707	FS	SQF	HNX	534	35.970556	-118.540833	4700
JUANITA	40240	FS	KNF	MFR	589	41.801944	-122.109722	5400
JULIAN	45708	State	MVU	SGX	513	33.075833	-116.590833	4240
JUNIPER CREEK	40308	BLM	NOD	REV	572	41.332222	-120.472500	4372
KEENWILD	45604	FS	BDF	SGX	513	33.666667	-116.766667	4920
KENWORTHY	45605	FS	BDF	SGX	513	33.617800	-116.617500	4600
KETTLEMAN HILLS	44602	BLM	BBD	HNX	526	36.033333	-120.056000	810
KNEELAND	40429	State	HUU	EKA	556	40.720000	-123.926944	2737
KONOCTI	41411	State	LNU	STO	558	38.913611	-122.417222	2100
LA PANZA	44914	State	SLU	LOX	525	35.381111	-122.253889	1630
LADDER BUTTE	40723	FS	LNF	STO	597	40.807222	-121.296667	5750
LAHONDA	43304	State	CZU	MTR	549	37.305278	-118.101389	425
LAKE PALMDALE	45450	L Gov	LAC	LOX	519	34.537222	-120.187500	2980
LAS TABLAS	44904	State	SLU	LOX	520	35.655556	-120.922778	1300
LAS TRAMPAS	43009	L Gov	EBY	LOX	547	37.833889	-122.066944	1760
LASSEN LODGE	40815	State	TGU	STO	597	40.344167	-121.713611	4100
LAUFMAN	40709	FS	PNF	REV	599	40.141667	-120.353333	4800
LAURAL MOUNTAIN				VEF	543	35.478333	-117.698889	4390
LAYTONVILLE	41019	State	MEU	EKA	557	39.702222	-123.485000	1838
LEO CARRILLO	45447	L Gov	LAC	LOX	501	34.045556	-118.935833	50
LINCOLN	41907	State	NEU		554	38.882500	-121.268333	200
LITTLE TUJUNGA	45411	FS	ANF	LOX	509	34.293611	-118.360833	1390
LIVERMORE	43406	State	SCU	MTR	547	37.711944	-121.813611	800
LOS ALTOS	43912	L Gov	SCU		549	37.358056	-122.147222	645
LOS BANOS	44003	State	MMU	HNX	526	37.054722	-121.053056	350
LOS GATOS	43913	L Gov	SCU	MTR	549	37.202778	-121.942778	2000
LOS PRIETOS	45203	FS	LPF	LOX	500	34.535833	-119.783333	1020
LOS VAQUEROS	43013	L Gov	SCU	MTR	547	37.788333	-121.734722	1100
LOST HORSE	45614	NPS	JOTR	VEF	543	34.017778	-116.187778	4200
LOWER KLAMATH	40310	FWS	KBR	MFR	589	41.999167	-121.700278	4098

LYTLE CREEK	45108	FS	BDF	SGX	510	34.233889	-117.438889	2792
MAD RIVER	40507	FS	SRF	EKA	555	40.463333	-123.523889	2775
MALIBU HILLS	45433	L Gov	LAC	LOX	505	34.058333	-118.703333	1575
MALIBU CANYON	45452	L Gov	LAC	LOX	505	34.099722	-121.778889	640
MALLORY RIDGE	43011	L Gov	SCU	MTR	547	37.817222	-118.633333	2040
MANZINITA LAKE	40609	FS	LNF	STO	597	40.540000	-121.580278	5660
MARIPOSA	44106	State	MMU	HNX	528	37.501111	-123.936667	2275
MARKLEEVILLE	42802	FS	TOF	REV	576	38.683333	-119.766667	5501
MCGUIRES	41017	State	MEU	EKA	557	39.352222	-123.596111	1040
MEANS LAKE						34.384444	-116.523889	2900
MENDOCINO PASS	41018	FS	MNF	EKA	557	39.807500	-122.945000	5420
METCALF GAP	44209	State	MMU	HNX	528	37.415556	-119.768611	3300
MEYERS	42607	FS	TMU	REV	542	38.848889	-120.018889	6310
MGROVE	44113	NPS	YNP	HNX	531	37.512778	-119.604722	6400
MIAMI	44110	FS	SNF	HNX	532	37.419167	-119.745278	4334
MID HILLS	45128	BLM	CDD	VEF	543	35.123056	-115.411389	5413
MIDDLE PEAK						37.930833	-122.590833	2490
MILL CREEK	45109	FS	BDF	SGX	510	34.083611	-118.082500	2950
MILL CREEK	45435	FS	ANF	LOX	507	34.390278	-117.034722	5021
MILO	44708	State	TUU	HNX	529	36.231944	-118.870556	2002
MINARETS	44203	FS	SNF	HNX	532	37.407222	-119.345556	5340
MODOC NWR						41.458889	-120.518889	4380
MOJAVE RIVER SINK	45122	BLM	CDD	VEF	543	35.053056	-116.079444	950
MONTECITO	45218	FS	LPF	LOX	501	34.461389	-119.648056	1500
MORMON ROCKS	45114	FS	BDF	SGX	511	34.317500	-117.501944	3300
MOUNT ZION						38.389444	-120.246944	2960
MT DIABLO	43012	L Gov	SCU		547	37.867222	-119.371111	3849
MT LAGUNA	45709	FS	CNF	SGX	513	32.881111	-116.428889	5760
MT SHASTA	40217	FS	SHF	MFR	584	41.315556	-122.315556	3591
MT TOM	44511	FS	SNF	HNX	533	37.376111	-118.520278	9018
MT ELIZ	43605	FS	STF	STO	539	38.063056	-120.651111	4933
MTREST	44505	FS	SNF	HNX	529	37.054167	-119.178333	4100
NEWHALL PASS	45454	L Gov	LAC	LOX	505	34.336944	-121.901111	2135
NORTHFORK	44204	FS	SNF	HNX	528	37.233056	-119.505556	2663
OAK BOTTOM	40636	NPS	YNP	STO	595	40.650556	-122.605556	1422
OAK CREEK	44804	FS	INF	VEF	517	36.842500	-118.259444	4855
OAK GROVE FIRE STA	45710	FS	CNF	SGX	513	33.385556	-116.790000	2752
OAK KNOLL	40218	FS	KNF	MFR	587	41.838611	-122.848889	1940
OAK MTN	40635	FS	SHF	STO	593	41.006389	-121.983333	2670
OAK OPENING	44717	FS	SQF	HNX	529	36.175278	-118.701667	3080
OAKLAND NORTH	43402	L Gov	EBY	MTR	550	37.865278	-122.220833	1300
OAKLAND SOUTH	43403	L Gov	EBY	MTR	550	37.783611	-122.159722	1000
OJAI	45315	L Gov	VNC	LOX		34.448330	-119.230278	765
OLEMA VALLEY	42303	NPS		MTR		38.042500	-119.230278	37
OPAL MOUNTAIN	45127	BLM	CDD	VEF	543	35.154167	-117.175556	3240
OWENS CAMP	42611	FS	ENF	STO	538	38.733333	-120.245000	5240
OWENS VALLEY	44803	FS	INF	VEF	517	37.390000	-118.550556	4640

OZENA	45303	FS	LPF	LOX	503	34.681944	-119.353889	3865
PALOMAR	45740	FS	CNF	SGX	513	33.351667	-116.861667	5530
PANAMINT	44806	BLM	CDD	VEF	543	36.120278	-117.087778	6880
PANOCHE	44514	State	FKU	HNX	524	36.630000	-120.638333	500
PARK RIDGE	44713	NPS	KNP	HNX	532	36.724167	-118.942500	7540
PARKFIELD	44310	State	BEU	MTR	524	35.898889	-120.431944	1535
PATTYMOCUS	40812	FS	SHF	STO	595	40.288333	-122.871667	3500
PEPPERMINT	44726	FS	SQF	HNX	534	36.072000	-120.642222	7167
PIERCE	40915	FS	PNF	REV	598	40.246111	-120.950000	5811
PIKE CNTY LO	41701	FS	PNF	STO	599	39.475000	-121.202500	3714
PILOT HILL	42609	State	AEU	STO	552	38.832500	-121.008611	1200
PINCRS	43606	FS	STF	STO	540	38.188889	-120.000277	5600
PINE HILLS FIRE STA	45711	FS	CNF	SGX	513	33.016389	-116.634444	3600
PINEHURST	44508	FS	SNF	HNX	529	36.697222	-119.018056	4060
PINNACLES	44410	NPS	PIP	MTR	524	36.470833	-121.147222	1322
PIRU	45319	L Gov	VNC	LOX		34.404440	-118.810000	624
PIUTE	45017	FS	SQF	HNX	534	35.445556	-118.810000	6440
POLE_MTN	42008	State	SNU	MTR	562	38.500000	-123.119999	2204
POPPY PARK	45440	L Gov	LAC	LOX	519	34.732500	-118.383333	2760
POTRERO	45730	State	MVU	SGX	513	32.606111	-116.608056	
POVERTY	43914	L Gov	SCU	SGX	550	37.443056	-121.770556	2350
PULGAS	43309	L Gov	CZU	MTR	549	37.475000	-122.298056	644
QUARTZ HILL	40239	State	SKU	MFR	587	41.599722	-122.932778	4238
QUINCY	40910	FS	PNF	STO	599	39.973333	-120.941944	3652
RANCHITA	45729	State	MVU	SGX	513	33.212222	-116.505278	4180
RATTLESNAKE	44728	NPS	KNP	HNX	534	36.406944	-118.421667	8600
RAVENDALE	40714	BLM	NOD	REV	572	40.730833	-120.316389	5298
READER RANCH	41809	State	NEU		535	39.303611	-121.117222	2025
REDDING	40611	FS/State	SHU	STO	595	40.515833	-122.290556	500
RICE VALLEY	45620	BLM	CDD	VEF	519	34.060833	-114.732222	820
RIVER KERN	45016	FS	SQF	HNX	530	35.777500	-118.432778	3000
ROBLAR	45732	DOD	MPC	SGX	508	33.372222		917
ROCK CAMP	45111	FS	BDF	SGX	511	34.288056	-117.212500	4900
ROCK CREEK	43710	FS	INF	REV	518	37.551389	-118.667222	7040
RODEO VALLEY	41015	State	MEU	EKA	557	39.668333	-123.320000	2425
ROSE PEAK	43404	L Gov	EBY	MTR	547	37.501944	-121.735556	3060
ROSE VALLEY II	45314	FS	LPF	LOX	503	34.543333	-119.184167	3331
ROUND MOUNTAIN	40221	FS	MDF	MFR	590	41.427222	-121.463889	5258
RUSH CREEK	40312	FS	MDF	MFR	590	41.288056	-120.868611	4800
RUTH STATION	40508	FS	SRF	EKA	555	40.250556	-123.315833	2732
SACRAMENTO NWR	41102	FWS	MNF	STO	595	39.417222	-122.182500	120
SADDLEBACK	41304	FS	SHF	STO	536	39.637500	-120.865278	6670
SADDLEBACK BUTTE	45444	L Gov	LAC	LOX	519	34.684722	-117.820833	
SAN CLEMENTE ISLAND		CSUN		LOX		32.840000	-118.387500	935
SAN LUIS NWR	44004	FWS		HNX	526	37.182222	-120.793889	65
SAN MIGUEL	45737	FWS		SGX	509	32.685000	-116.973611	425
SAN RAFAEL HILLS	45451	L Gov	LAC	LOX	505	34.194167	-118.212500	1770

SANTA BARBARA ISLAND		NPS		LOX		33.483333	-119.033333	360
SANTA CRUZ ISLAND	45216	NPS	CHIS	LOX	501	33.995833	-119.722222	250
SANTA FE DAM	45437	L Gov	LAC	LOX	501	34.120833	-117.945833	500
SANTA RITA	44408	BLM	BBD	MTR	524	36.347778	-120.597778	5000
SANTA ROSA	42009	State	LNU	MTR	559	38.478889	-122.711944	560
SANTA ROSA ISLAND	45217	NPS	CHIS	LOX	501	33.977778	-120.077778	1298
SANTA ROSA PLATEAU	45623	State	RRU	SGX	513	33.528611	-117.230556	1980
SAUGUS	45412	L Gov	LAC	LOX	505	34.425000	-118.525000	1450
SAWYERS BAR	40222	FS	KNF	MFR	586	41.301111	-123.129722	2192
SCHOOLHOUSE	40425	NPS	RNP	EKA	560	41.138333	-123.905556	2640
SCORPION	40517	FS	SHF	EKA	591	41.111667	-122.696667	4400
SECRET TOWN	41808	State	NEU		535	39.183611	-120.884722	2720
SEEDORCHARD	41908	FS	TNF		536	39.091389	-120.731667	4355
SFORK	45012	BLM	BBD	HNX	530	35.983300	-118.583300	3000
SHADE QUARTER	44724	State	TUU	HNX	534	36.567222	-118.955556	4089
SHAVER	44522	State	FKU	HNX	528	37.135278	-119.255000	5800
SHIP MTN L.O.	40105	FS	SRF	EKA	556	41.735833	-123.791667	5300
SIMI VALLEY	45317	L Gov	VNC	LOX		34.291111 - 118.814444	-118.814444	914
SIMS	40618	FS	SHF	STO	593	41.075000	-118.814444	2400
SLATER BUTTE	40225	FS	KNF	MFR	585	41.858611	-123.352500	4670
SMITH PEAK	40911	FS	PNF		599	39.863000	-120.526000	7688
SODA CREEK	41406	FS	MNF	EKA	557	39.425000	-122.977222	1725
SOLDIER MTN	40630	State	SHU	STO	593	40.925833	-121.585556	3710
SOMES BAR	40231	FS	KNF	EKA	586	41.390000	-123.495833	920
SPRING VALLEY	43308	L Gov	CZU		549	37.562500	-122.436389	1075
SQUAW SPRINGS	N/A	N/A	N/A	VEF	543	35.370000	-114.474167	3620
SQUAW_LAKE	45801	BLM	CCD		310	32.907778	-120.075000	300
STAMPEDE	41310	FS	TNF	REV	541	39.483333	-117.570278	6600
STONYFORD	41503	FS	MNF	STO	595	39.366944	-122.575000	1257
STRAWBERRY	45110	FS	BDF	SGX	511	34.241000	-117.247000	6150
SUGARLOAF	44729	NPS	KNP	HNX	534	36.726667	-118.675000	7950
SUGARLOAF						38.783889	-122.438333	5563
SUGARLOAF (SHF)	40614	FS	SHF	STO	592	40.916667	-122.438300	3214
TALEGA	45739	DOD	MCP	SGX	508	33.478056	-117.485833	1203
TANBARK	45421	FS	ANF	LOX	509	34.206944	-117.760556	2600
TEMESCAL	45307	FS	ANF	LOX	505	34.480556	-117.411111	1140
TEMESCAL FIRE STA	45611	FS	CNF	SGX	509	33.762500	-118.755556	1125
THOMES CREEK	40816	State	TGU	STO	595	39.864444	-122.609722	1100
THOUSAND OAKS	45328	L Gov	VTU	LOX		34.210000	-118.870000	795
TIMBER MOUNTAIN	40306	FS	MDF	MFR	590	41.629444	-118.870000	4960
TONNER CANYON	45453	L Gov	LAC	LOX	509	33.947500	-117.822222	1340
TRIMMER	44510	FS	SNF	HNX	529	36.911111	-119.305000	1540
TRINITY CAMP	40516	State	SHU	EKA	591	40.678889	-122.833056	2100
TUOLME	43611	NPS	YNP	HNX	531	37.868333	-119.319167	9200
UHL/HOT SPRINGS	44712	FS	SQF	HNX	529	35.886667	-118.648333	3720
UNDERWOOD	40519	FS	SRF	EKA	555	40.721944	-123.495278	2600
VALLEY	44111	NPS	YNP	SGX	531	37.750000	-119.583300	4000

VALLEY CENTER	45734	State	MVU	SGX	509	33.226111	-116.992222	1370
VALYERMO	45423	FS	ANF	SGX	514	34.445556	-117.851111	3780
VAN BREMMER	40243	FS	KNF	MFR	589	41.643056	-121.793889	4928
VANDENBERG	45220	FS	LPF	LOX	500	34.803333	-120.520556	1050
VISTA GRANDE	45612	FS	BDF	SGX	513	33.837000	-116.808000	4925
WALKER	43707	FS	TYF	REV	576	38.565278	-119.459167	5440
WALKER PASS	45014	BLM	BBD	N	530	35.665833	-118.056944	5572
WARM SPRINGS L.O.	45426	FS	ANF	LOX	506	34.595833	-118.578611	4930
WAWONA	44109	NPS	YNP	HNX	531	37.533300	-119.650000	3960
WEED	40228	State	SKU	MFR	588	41.478889	-122.453889	2930
WESTSIDE	40428	NPS	RNP	EKA	560	41.223333	-124.052500	1291
WESTWOOD	40719	State	LMU	STO	597	40.306667	-120.900000	5800
WHISKEYTOWN HQ	40628	NPS	WNP	STO	595	40.619167	-122.534166	1311
WHITAKER PEAK	45448	L Gov	LAC	LOX	506	34.568611	-118.740278	4120
WHITECLOUD	41806	FS	TNF	STO	536	39.316667	-120.837500	4320
WHITMORE	40615	State	SHU	STO	596	40.620278	-121.903889	2454
WHITTIER HILLS PARK	45446	L Gov	WIT	LOX	501	33.983889	-118.010000	950
WILEY RIDGE	45335	L Gov	VNC	LOX	505	34.375833	-118.821111	1665
WOLVERTON	44732	NPS	KNP	HNX	534	36.445000	-118.703333	5240
WOODACRE 2	42309	L Gov	MRN	MTR	559	37.990556	-122.644722	1400
WWOLF	43612	NPS	YNP	HNX	531	37.851111	-119.650000	8000
YOLLA BOLLA	40511	FS	SHF	STO	594	40.338333	-123.065000	4768
YUCCA	45112	State	BDU	SGX	516	34.123333	-116.407778	3260
YUROK	40427	BIA	YIA	EKA	556	41.289722	-123.857500	495
ZION	42701	State	AEU		552	38.391000	-120.651100	2960

APPENDIX G - Contact Information for WFOs and PSUs

NORTHERN CALIFORNIA PSU/ PREDICTIVE SERVICES UNIT
6101 Airport Road, Redding, CA 96002-9423
FAX Number: (530) 226-2742
Web Site Address: http://gacc.nifc.gov/oncc/predictive/weather/index.htm
Office E-mail: redding.fwx@fire.ca.gov
Office Hours: late March to mid November: 7am – 5pm daily; rest of year: 7am – 5pm M-F

SOUTHERN CALIFORNIA PSU/ PREDICTIVE SERVICES UNIT
2524 Mulberry Street, Riverside, CA 92501-2200
FAX Number: (90951) 276-6439
Web Site Address: http://gacc.nifc.gov/oscc/predictive/weather/index.htm
Office E-mail: riverside.fwx@fire.ca.gov
Office Hours: Fire season: 7am–5pm daily. Low season: 7am – 5pm M-F

EUREKA NWS WEATHER FORECAST OFFICE
300 Startare Drive, Eureka, CA 95501-6000
FAX Number: (707) 443-6195
Web Site Address: http://www.weather.gov/eureka

HANFORD/ SAN JOAQUIN VALLEY NWS WEATHER FORECAST OFFICE
900 Foggy Bottom Road, Hanford, CA 93230-5236
FAX Number: (559) 584-1152
Web Site Address: http://www.weather.gov/hanford

LAS VEGAS NWS WEATHER FORECAST OFFICE
7851 Industrial Rd., Las Vegas, NV 89139-6628
FAX Number: (702) 263-9759
Web Site Address: http://www.weather.gov/lasvegas

LOS ANGELES/ OXNARD NWS WEATHER FORECAST OFFICE
520 N. Elevar Street, Oxnard, CA 93030
FAX Number: (805) 988-6613
Web Site Address: http://www.weather.gov/losangeles

MEDFORD NWS WEATHER FORECAST OFFICE
4003 Cirrus Drive, Medford, OR 97504
FAX Number: (541) 776-4333
Web Site Address: http://www.weather.gov/medford

PHOENIX NWS WEATHER FORECAST OFFICE
PAB 500, P.O. Box 52025, Phoenix, AZ 85072-2025
FAX Number: (602) 267-8051
Web Site Address: http://www.weather.gov/phoenix

RENO NWS WEATHER FORECAST OFFICE
2350 Raggio Parkway, Reno, NV 89512-3900
FAX Number: (775) 673-8110
Web Site Address: http://www.weather.gov/reno

SACRAMENTO NWS WEATHER FORECAST OFFICE
3310 El Camino Ave, Room 227, Sacramento, CA 95821
FAX Number: (916) 979-3052
Web Site Address: http://www.weather.gov/sacramento

SAN DIEGO NWS WEATHER FORECAST OFFICE
11440 W. Bernardo Ct, Ste 230, San Diego, CA 92127
FAX Number: (858) 675-8717
Web Site Address: http://www.weather.gov/sandiego

SAN FRANCISCO BAY AREA NWS WEATHER FORECAST OFFICE
21 Grace Hopper Ave, Stop 5, Monterey, CA 93943
FAX Number: (831) 656-1747
Web Site Address: http://www.wrh.noaa.gov/mtr